

# FLORIDA HIGHWAYS



Vol. 1



DECEMBER  
1923



No. 1



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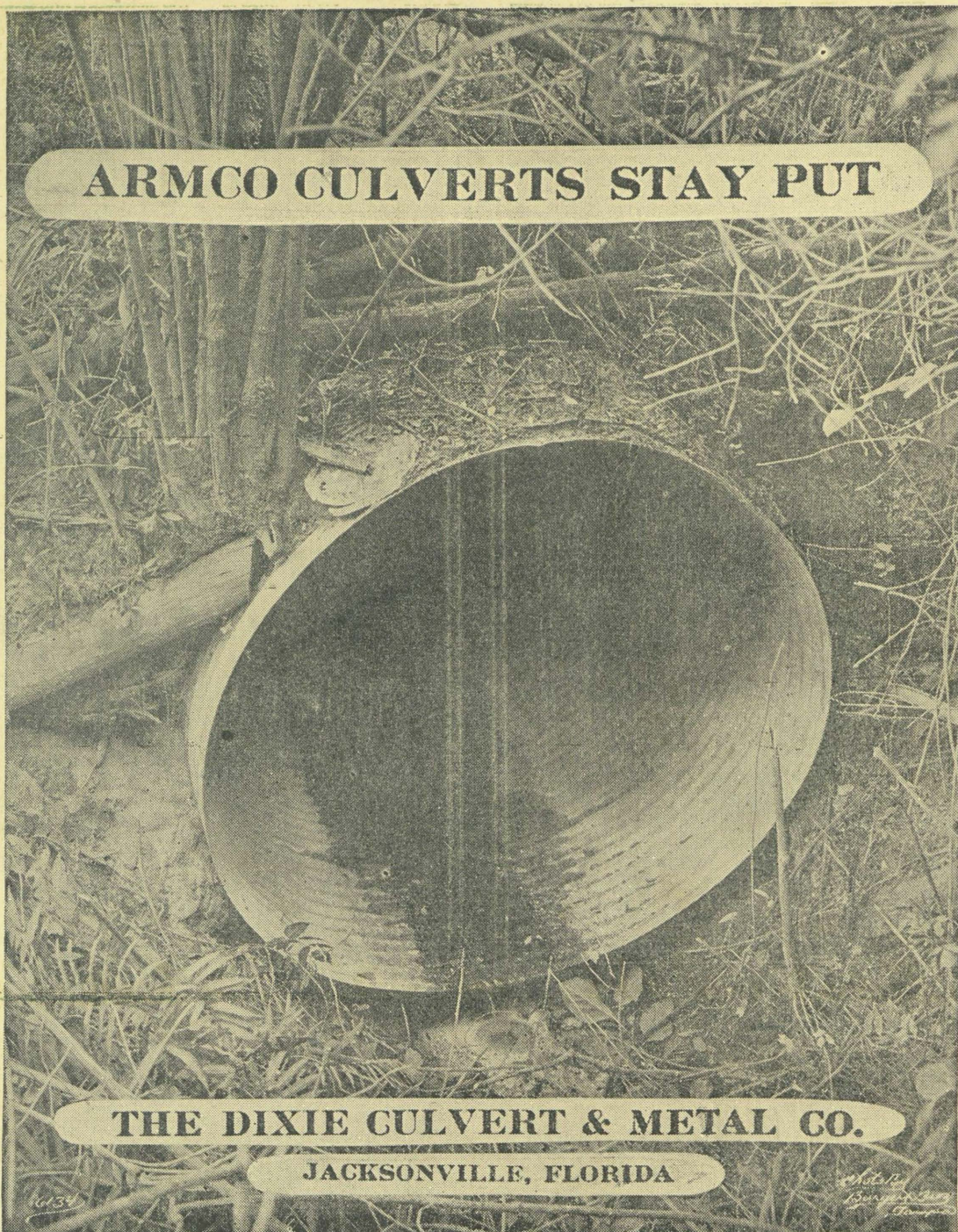
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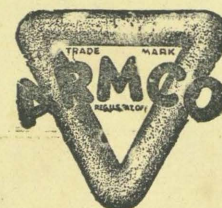
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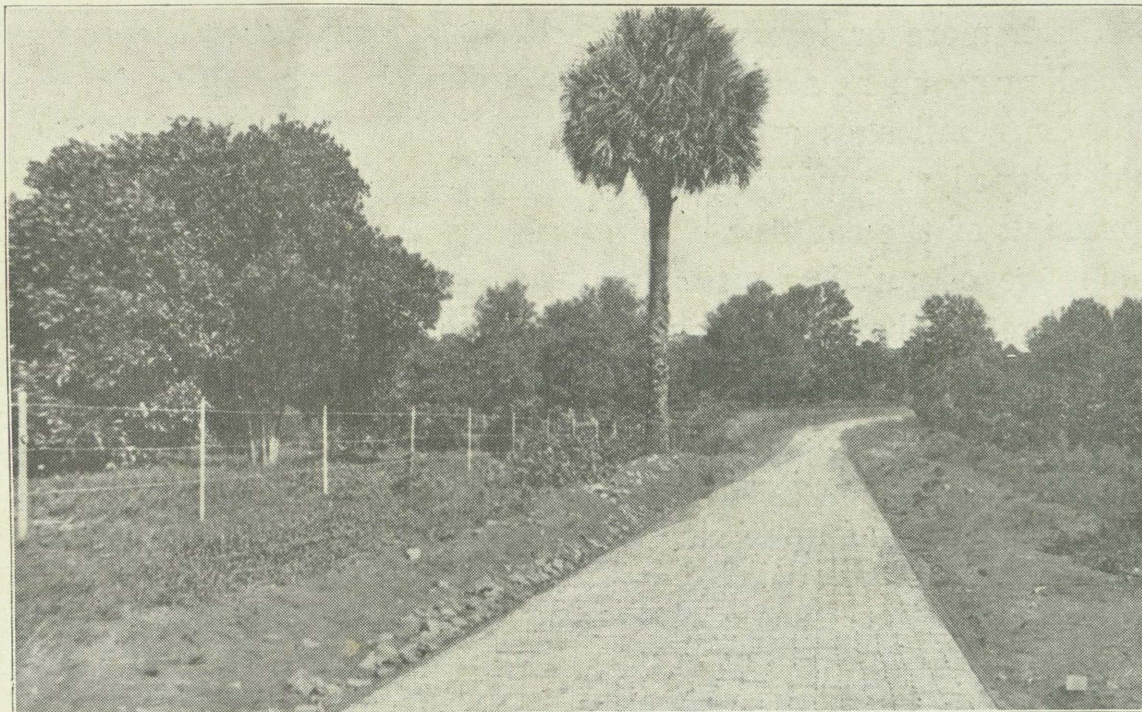
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# FLORIDA HIGHWAYS



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## The Functioning of Federal Aid in the Development of Highway Transportation

Thomas H. MacDonald, Chief, Bureau of Public Roads, Washington, D. C.

In the State of Arizona there is a mine in operation today producing copper from an extremely low-grade ore. So small is the percentage of metal that at current prices, a fraction of the price of only two or three years ago, about sixteen tons of ore must be handled per day for each man upon the pay roll to make the business pay. Further, the ore is not worked in the open, but mined and lifted from the 600-foot level. It is said \$16,000 000 were expended to develop and equip this mine before any metal was produced. Here is found mechanical efficiency, but the enterprise was founded not on efficiency but on imagination and courage.

It is becoming more and more apparent that this nation faces the future more seriously in need of efficiency than has ever been our need in the past, and real efficiency can only come as a product of imagination and courage. Contemplate, if you please, the lowered standard of living and the desperate economic conditions with which the people of many other nations are contending, then picture the great big major fact that this nation must be forced into economic competition with these nations. If we succeed in holding and retain the hope of improving the standard of living of our agricultural population, the stronghold of this country, it will only be through the exercise of imagination and courage to gain efficiency of operation, as essential to a nation as to a private business.

The annual loss due to the lack or to the high cost of transportation imposes upon the business of this country a waste out of all proportion to the cost of remedying the conditions. But it cannot be said that we are today attacking with imagination and courage necessary any one of the fundamental conditions which must be met if we are to have adequate and economical transportation; and by transportation I do not mean railway or highway or waterway transportation alone, but transportation in which all three of these shall meet and each shall serve that purpose which it is best designed to serve, and each shall supplement the other.

Just at this time it is impossible to pass without comment the results of many recent elections. These can only be interpreted as an expression of an economic hurt and resentment which are the outgrowth of the readjustment period through which we are passing. The road problem has been an issue in a number of states. As the returns have come in there has been presented the anomaly of a demand for lower taxes and curtailed expenditures for roads, and at the same time the approval of additional bond issues which can only be met through increased revenues; these happening in the same state and at the same election. In some instances there is grave doubt as to the economic justification of the highways for which provision was made.

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It is certainly not apparent that a reaction against the highway improvement program has been expressed, but rather that a very strong reaction has been voiced against the present economic conditions. In some states there has been more or less pointing to the high cost of the road program as a reason for discontent. The need for long mileages and higher types of highways has developed so rapidly that it has forced the highway officials of the country out in front of the foremost advance of public sentiment, there to become a common target for both the progressive and the conservative elements of our population, speaking not of political parties, but rather of the two general groups into which people divide themselves based upon their natural reactions to all public improvements. The one element is impatient because of two slow progress; the other dissatisfied because, first, the improvements are not in the right localities, or, second, the wrong political party is receiving credit, or, third, the cost is too high. Eliminate these latter contentions and at least 90 per cent of all opposition to the highway program of any state is dissipated to the four winds.

Under the existing conditions, I am glad to have the opportunity to express here the admiration which I feel for the deep-seated loyalty, honesty and devotion to the public service of the men serving in the capacity of highway officials all over these United States. To know and to believe in these men, as it is my privilege, strengthens my belief in the continued progress of this nation. And I am confident that there is not a personal expression in any of these. It is an expression of the resentment against economic conditions. We know that in order for conditions to grow better our transportation has to grow better. It is not the only thing that has to be different. There are other readjustments necessary, but this is one of the essentials and on the whole, highway transportation is a major, not a minor, factor.

The providing of highways as an integral and necessary part of making possible the service of highway transportation is a serious and a responsible undertaking, and there seems to me to be evidence in plenty that, generally speaking, our highway officials are rising to the needs of the times. But their work must become more certain, and directed toward better understood objectives, if the public is to succeed in building for itself a system of highways that will not fail. Not only is this true, but their work must be directed by those requirements which may be termed fundamental principles underlying the whole structure of transportation in its highway phase. Can we not, out of the experience of the past—out of the development of railway transportation and the condition in which it finds itself today—secure the necessary information and guidance that the development of our highway system shall go forward economically and efficiently?

Permit me to quote recent testimony from the railroads themselves. Mr. Markham, the president of the Illinois Central Railroad, in New York on November 9 said, in speaking of the complaints which exist with reference to the present lack of rail transportation:

"Some are without justification, but they reflect a nation-wide condition, the existence of which cannot be questioned. There have been other times when the

service the railways could render has been unequal to the demands. This was the case, for example, in 1906 and 1907, and in the war years. But in every past time when there was a shortage of transportation, it was felt only after the revival and increase of business had been going on for some time and had carried production and commerce to higher levels than even before. What we call 'car shortages' always have represented inadequacy of all railroad facilities. The car shortages of 1906 and 1907 did not come until toward the close of a 10-year period of industrial and commercial expansion, during which the railways had increased by two and one-half times the volume of freight carried by them. The car shortages of the war years did not begin until when, in 1916, the railways were handling 20 per cent more freight than in the previous year.

"The outstanding fact regarding the present shortage of transportation—the significant fact which challenges our attention—is that it has been met at the very beginning of a period of business revival. In this respect it creates a situation unprecedented in the history of the United States—a situation which should cause every farmer and business man, every railway regulating official, every public man, every wage worker, to pause and reflect seriously.

"Nothing less than a revolution has occurred when our railways, whose surplus capacity has always in the past periods of business made possible the vast increases which have occurred in our production and commerce, are found threatening to prove unequal, or actually proving unequal, to the demands made upon them at the very beginning of a period of business revival. The railways are now moving about as much freight weekly as in 1920, when the highest record was made. In spite of this, the car shortage recently reported has been the largest ever known, and the demands of shippers continue to increase. In past periods of business revival, the increase in freight business has gone on until it has reached a point 35 to 150 per cent higher than ever before. We may well ask ourselves whether with the railways finding it difficult to surpass the freight-carrying record of 1920, they can be expected within a few months or years to handle such an increase in tonnage as past experience shows would be only normal in a period of general revival."

This frank recognition and statement of a condition from this high railway source carries the weight of conviction that under no conditions can the highways escape, an additional burden of transportation which will be thrown upon them, due to the overflow from the railways. It cannot be otherwise. And while the rate of increase in the past has been enormous, we must conclude that this increase is to continue and to become more acute, because as the railways fail to carry the increased business which must be a part of and necessary to business revival, cost will cease to be a governing factor, and the time of the service become the one essential.

But we are not highway officials alone. We are officers of the government of the states and of the United States. It is our duty to undertake the responsibility of helping to work out this transportation situation.

We have had recently in the statement of Mr. Lyford, vice-president of the C. & E. I. Railway, for



the first time, an expression of constructive ideas as well as specific facts which indicate something of the supplementary relationships which can be established between the highways and the railways. He says:

"Under existing rates the line haul of freight would be highly profitable if the revenue therefrom were not absorbed by constantly increasing terminal charges."

And among the five specific evils which assist to prey upon the earnings of the line haul of the railways, three of these reasons are as follows:

"The lack of organized collection and delivery service, making necessary unreasonably large and expensive freight terminal facilities, and an unreasonably large supply of freight cars."

As a specific example, he recites the fact that the interest charges alone upon the value of the real estate of the freight warehouse in Chicago at 12th Street impose a charge of \$2.50 per ton for every ton of freight which passes through that warehouse.

"Second, the use of box cars for transfer of l. c. l. freight between railway stations and large terminal areas, a service which the trucker could perform more quickly and economically, thereby releasing box cars from an unprofitable service, and increasing the carrying capacity of railways."

"And third, the operation of branch lines on which traffic is too light to sustain the rail operation—a service which the motor truck can perform better and at less expense."

All of these specific remedies call for the supplying of adequate highways, either urban or suburban. Further he states:

"If all of the freight cars which carry loads into the Port of New York, the switching district of New York, and other large terminal areas, could be unloaded on the day of their arrival, they could be loaded out the same day or the following day, and the present freight car equipment of the railways would be sufficient to meet all transportation needs for several years to come."

And yet we believe that we must add greater and greater equipment, necessitating higher charges. It seems to me it has come time to use economy in the use of our present investment in railway and highway equipment to the end that we will not build up further interest charges. Further he states:

"Competition for the local carriage of goods within city and suburban areas ought to be welcome by the railways, as they perform this service at an actual loss, while the trucker can perform it at a profit. On the other hand, competition with the railway for the carriage of goods through the rural districts along the main lines of railway is harmful to the railway and unprofitable to the trucker."

Here are briefly, perhaps inadequately sketched, certain phases of the transportation problem which are to be met. It is about time that we recognize in this country the fact that the development of adequate highways is not a problem for the farmer, nor is it a problem alone for the city man. It is one of the fundamental transportation problems in every locality and the use of the roads in every locality will reflect the life and activities of the people in the locality. This is demonstrated beyond dispute by the traffic census which we are now carrying forward. And, despite any conditions, political or otherwise, highway improvement in this country must go forward on an in-

creased scale, because it will cost more to do without the transportation service which can be supplied through the building of highways than it will cost to build and maintain them.

Here is an example taken from an industrial section. The recent traffic counts in Connecticut and Massachusetts, taken in October, which is an average traffic month, give an average for each of four stations of 1,140 tons of commodities per day of nine hours. Adding one-third as a very conservative estimate for the full day, we have 1,520 gross tons daily commodity movement, that is, the weight of the commodity and the carrying vehicle.

SUMMARY TABLE OF COMMODITY MOVEMENT, CONNECTICUT AND MASSACHUSETTS

Class of Commodity	Average Haul Miles	Total net Weight tons	Percentage Total Net weight	Ton miles Net weight	Gross weight Tons
Products of agriculture.	34.5	1,094.6	8.7	39,802	2,630
Products of animals....	39.4	1,216.1	9.6	48,113	3,121
Products of mines.....	25.6	669	5.4	17,328	1,288
Products of forests.....	35.2	419.6	3.3	13,970	1,017
Products of manufacture	49	9,151.9	73	411,611	23,223
Totals.....		12,551.2	100	530,824	31,280

The agricultural tonnage is not large, neither is that of a number of the other activities, but the manufacturing tonnage is the big and important item. So we find reflected the life and activities of that section in the highway commodity movements because 73 per cent of the commodity movements consist of the products of manufacture, the other being divided between the products of agriculture, mines and forests. From figures which have been published by the Iowa Experiment Station, assuming gasoline to cost 24 cents per gallon, the cost of the fuel along for moving this tonnage per mile per day would be \$26.44 over an ordinary dirt road, assuming the impossible, that such traffic could be carried over a dirt road. The cost of fuel for moving the same tonnage over a paved road would be \$11.70, a difference of \$14.74 per day. On the basis of 300 days per year, the actual saving in fuel alone moving this tonnage, which comes from the actual weighing of the actual movements, would be \$4,022.00. The paved highway costs approximately \$40,000. The average interest at 5 per cent would be \$1,000, which, deducted from the actual saving on fuel, would leave a balance which would retire the cost of the road in a little over 11 years. The maintenance costs are not figured in either case, but a greater maintenance charge could be deducted than the roads are actually costing, and still the balance of the saving would be sufficient to retire the cost within what we believe to be a reasonable period for the service of the road without extensive repairs.

Here are the astonishing figures of the cost of an improved highway constructed at prices which are above what we believe will be the general average of such costs, and the saving in the fuel consumption alone is sufficient to pay the cost of the highway plus interest charges plus maintenance, and the tremendous passenger traffic is carried on this basis, free of cost.

Individually the cost is not distributed on the basis of commodity hauling, but the public as a whole, through its saving in fuel alone, is enabled to build highways of the type demanded, and the very large



saving on passenger traffic can be entirely neglected. Similar assumptions could be recited for other parts of the country, and in each case the cost of highway improvement would justify itself provided the roads are designed for the traffic of that community and the traffic units which they ought to bear.

Here, then, is the functioning of Federal aid in the development of highway transportation. The Bureau of Public Roads is an agency. It is an agency representing all of the State highway departments, and attempting to enforce the average ideals and standards which are the general average of the experience and the practices in the states which are making the best progress, and these standards are not such that they impose unjust or unnecessary restrictions or requirements on any state in the construction of the Federal Aid highways.

The principles which are being administered are not the standards of one state, but rather the average standards, and it would be manifestly unfair to those states which are standing for the progressive and proper development of their highways to meet their transportation necessities, not to insist that all of the states shall come up to a reasonably uniform standard considering the states by groups. The Bureau has no apologies to make for insisting on standards which have been developed through this experience. There is no question that the states should be considered in groups, and the standards of one group should not, and in many cases cannot be applied to other groups, but within the group itself. While the Bureau has full sympathy for any retarding condition in which a state finds itself with respect to funds, its organization, or its own laws, the Bureau would be open to the most just criticism should it allow that state to fall below the standards of the area in which the conditions are common and continue to participate in the Federal road funds. The Bureau is earnestly endeavoring to define the areas in which like conditions prevail, and to place justly the states in these areas. So far as is possible, only those standards which are necessary to the development of the transportation needs of that area will be insisted upon, but there is little sympathy for a state which lags for years behind the other states in any group. It would not be a kindness, and it would only result in detriment to the progress of highway development in this country as a whole, to condone or fail to enforce in any state the standards that are agreed upon as necessary to that group. This position seeks only to express the experience and viewpoint of the majority of the states—the foundation principle upon which this government was built, and upon which all our institutions have been developed. It is only the application of the theory which underlies our whole form of government.

It is not my wish to dwell in detail upon any particular policies. There are certain requirements which are fundamental—the location, alignment, and gradients of our highways are the most permanent parts. This axiom has been repeated over and over and yet there confronts the Bureau time after time requests to approve projects which violate these requirements without regard for the perpetuation of bad highway standards for generation after generation into the future.

I cannot express too strongly my appreciation of the cooperation which has been received from the states without exception, in putting into operation

the Federal Highway Act of November, 1921, which imposed many restrictions and requirements which had not previously existed.

There have been two questions involving the design of highways for which it has been difficult to establish proper policies. The first of these was met by the establishment of the policy of stage construction, and the second was met by the establishment of the policy of classifying railroad crossings in the order of their relative importance for elimination or improvement.

Stage construction has not been developed as a plan to accept on faith the fulfillment of promises which neither the past performance or the present indications show that the state contemplates. Rather it is a plan by which a state may operate which is working on a definite plan to improve its Federal highway system adequately, and has established methods of financing or of producing revenues that will in a reasonable time complete the improvement by stages. The adoption of stage construction cannot nullify the provision of law requiring maintenance. It is axiomatic, therefore, that, if the maintenance funds are inadequate, that the Bureau must require construction that can be maintained within funds available.

The cheapest railroad crossing improvement is the elimination of grade interesections through relocation. This whole question, moreover, is one which ought to lie heavily on the conscience of every highway official. The Bureau has been frequently accused in the past of holding up the states' programs because of refusal to approve projects having grade crossings. There is no safe grade crossing. Some are relatively less dangerous than others. The man who insists on carrying main highways across main line railways at grade is making headway with his program at the cost of human lives.

In summary, then, it is apparent there is the greatest need for the exercise of courage and imagination in meeting the problems of highway administration and improvement which are ahead. There is the need for a vision of the future encompassing all that the development of a perfected system of highway transportation can mean to this country. The plans must be matured and policies enforced at this time when the whole public is suffering an economic hurt. There must come the correlation of the system of highway transportation with other transportation systems, and particularly must the highways take over the burden which the railways now carry only with loss, as evidenced by the testimony of the railroads themselves.

Federal aid is functioning in a major way to accomplish these larger purposes by fixing our efforts for the time upon the completion of the Federal aid highway system. It is requiring, and must in the future be more strict in the requirement, that the states shall maintain adequate highway departments. The application of Federal aid has proven to be sufficiently flexible to adapt itself to the needs of the different states, and to be readily adjusted to the character of highway development needed in the metropolitan areas as well as in the strictly rural sections of the country. In requiring adequate maintenance, the Bureau seeks only to secure the maximum of highway service and to protect the investment without which our highway program cannot continue to receive the support of the public. The Bureau seeks only those fundamental requirements of location,



alignment, and freedom from railroad grade crossings that are essential to the upbuilding of an adequate highway system. This fact must never be lost sight of, that as the present stretches of highways are connected by the building of the intervening sections, the traffic over the individual highways will become greater until it reaches a point of stability which will only be changed by the completion of new routes in contiguous territory, so that not only freedom from danger is sought, but economy and continuity of operation are essential requirements.

Finally, the Bureau does not attempt to dictate the highway policies of the several states, but rather to

reflect the standards and policies which a majority of the state highway departments are using, developed out of experience and the expenditure of large sums of money, as necessary and essential to the proper development of the highway systems within the individual states. In the administration of the whole of the Federal aid work, the Bureau attempts to carry to each state the help and cooperation founded upon the best developments wherever these have been reached.

(Editorial Note—Delivered before last annual meeting American Association of State Highway officials.)

## An Historical Resume of the State Road Department

By FRANK W. BERRY, JR., Office Engineer

As all State work has its beginning in some kind of legislative enactment, it might be well to go back and review the various steps and laws enacted creating the present department, and some little of the history pertaining thereto.

About a generation ago an enthusiastic body of gentlemen met in Orlando for the purpose of discussing good roads. It was at this meeting the Florida Good Roads Association was founded. The Association received support from several counties and from time to time various other counties fell in line.

This Association soon realized that it would require some action of the Legislature to secure roads across counties and that a system of State Roads would have to be provided for. To this end a general plan was worked out and submitted to the Legislature in 1915. As a result the Legislature passed an Act, Chapter 6883, Acts of the Legislature of 1915, creating the State Road Department: Providing for the appointment of members, prescribing their duties and powers; providing for the employment of a State Road Commissioner, creating a fund for maintenance thereof; providing for the selection of a chairman and fixing his compensation; providing a system of State and State Aid Roads, etc.

Under this act the Governor appointed the following members:

1. Ed Scott, Chairman;
2. J. D. Smith, Secretary;
3. W. J. Hillman,
4. F. O. Miller, J. E. Gilbert,
5. M. M. Smith.

This board appointed Wm. F. Cocke as Commissioner or State Highway Engineer.

The Legislature at the same time passed a companion bill providing that 15% of the Auto License money collected in the several counties should be turned over to State Treasurer for the purpose of maintaining the department.

This law was amended in 1917 by Chapter 7899, Acts of 1917, defining more clearly the various functions of the State Road Department. It was also amended in 1919 by Chapter 7900, Acts of 1919. This act further designated the powers and limitations of the Department.

A law was passed in 1919, Chapter 7901, Laws of 1919, accepting Federal Aid and providing a tax on

all taxable property to meet same. Other legislation adopted in 1919 is as follows:

Chapter 7809, amending Chapter 7325, Acts of 1917, creating convict force.

Chapter 7833, provides for the care and maintenance of convicts and appropriation therefor.

Chapter 7898, creating and amending previous traffic laws.

Chapter 7903, validating contracts.

The following members from the various Congressional Districts have served at times on the Board.

October 1, 1915 to September 30, 1916:

Ed Scott, Chairman, 1st Congressional District, Arcadia.

W. J. Hillman, 2nd Congressional District, Live Oak.

J. D. Smith, 3rd Congressional District, Marianna.

M. M. Smith, 4th Congressional District, Orlando.

F. O. Miller, State at Large.

W. F. Cocke, Commissioner.

October 1, 1916 to September, 1918:

Ed. Scott, Chairman, 1st Congressional District, Arcadia.

M. M. Smith, 4th Congressional District, Orlando.

J. D. Smith, Secretary, 3rd Congressional District, Marianna.

J. E. Gilbert, Vice-Secretary, State at Large, Jacksonville.

W. J. Hillman, 2nd Congressional District, Live Oak.

F. O. Miller, State at Large, Jacksonville, from October 1st, 1915, to October 1st, 1917.

October, 1918 to December, 1920:

Ed Scott, 1st Congressional District, Arcadia.

L. C. Register, 2nd Congressional District, Jasper.

W. J. Hillman, 2nd Congressional District, Live Oak.

W. A. Holt, 2nd Congressional District, White Springs.

J. D. Smith, 3rd Congressional District, Marianna.

M. M. Smith, 4th Congressional District, Orlando.

Forrest Lake, 4th Congressional District, Sanford.

J. E. Gilbert, State at Large, Jacksonville.

C. A. Tutewiler, State at Large, Jacksonville.





## Florida Highways

Published Monthly  
Official Publication of the State Road Department

### STATE ROAD DEPARTMENT

H. B. Philips.....Chairman  
W. J. Hillman.....Member  
W. M. Corry.....Member  
E. P. Green.....Member  
I. E. Schilling.....Member  
J. L. Cresap.....Acting State Highway Engineer  
Ella Creary Thompson.....Secretary

This magazine is edited in the offices of the State Road Department, Tallahassee, and published monthly. Subscription rate, one dollar per year. Permission is granted to republish, with proper credit, the matter contained herein.

Application has been made for transmission through the mails as second-class matter.

B. A. Meginniss, Attorney for the Department,  
Editor and Business Manager

Volume 1      December, 1923      Number 1

## Editorial

### BY WAY OF SALAAM

Without apology, but in the sincere hope that it may fill what many have for some time conceived to be a real want, Florida Highways is launched. Some statement of its plans, ideals and purposes may not be amiss.

Primarily, the magazine will promote the cause of good roads in Florida. It will deal with the work of the State Road Department, with the programme which the Department strives to accomplish, and it will discuss frankly and without partisanship the many problems which are encountered in the effort to give Florida a system of well located, connected and permanent arterial highways. Florida Highways will reflect the attitude and opinions of the Department, but it will do so always without heat and solely in the desire to place before its readers the facts as they appear to those most intimately connected with Florida's road programme.

Advocacy of good roads is no longer a matter of policy or expediency. The progress which has been made throughout this State and the nation as well toward linking up communities, counties and states with real and permanent highways, and the manifest

betterment which has accrued to every such community, county or state where the idea has been put into practical operation, have supplied the necessary education on the value of good roads, if any were needed.

This magazine is interested in every movement which touches the Florida programme of road building. We realize the inestimable value of the work which has been done and is being done in and by the counties of the State. In more than one it is probable, as a result of recent bond issues, that more money will be available for road construction than will be received by the State Road Department during 1924. Any programme of road building which omits the magnificent work which has been and is being done by the counties of the State, is one-sided. With this view before us, it is our hope to present not only the work, the plans and the ideals of the State Road Department, but to set before our readers also a graphic and accurate account of what the counties are doing towards accomplishing Florida's programme. To this end, we solicit the cooperation of the counties of the State, their commissioners and engineers, and it is our hope that we may be able to establish a County Department which will be devoted to the road activities of the several counties of the State.

We express our grateful appreciation to those friends who so promptly and generously responded to our appeal for subscriptions and thereby enabled us to secure mailing privilege for the magazine immediately, and we are particularly indebted to those who, with their "heart and dollar" sent along also a word of encouragement and Godspeed.

### ACKNOWLEDGMENT

The position of Editor and the duty of launching Florida Highways has been assigned to the Attorney for the State Road Department who will continue to act in that position, at least for the present.

The Editor, who is without any great familiarity with the work of editing, publishing and managing a magazine, desires to express his grateful acknowledgment to those officials of the Department and to the many other loyal friends in all walks of life who have assisted so materially with their counsel, suggestions and contributions in bringing forth this first issue. Without them, the magazine could not have been issued, and whatever of merit may be found in these pages is due in major part to these officials and friends. With a continuation of such loyal support and co-operation, the Editor faces his task with less of misgiving and more of hopefulness that the magazine may be brought to take the place it was designed to fill.

Florida Highways invites comments and criticisms from its readers. Any suggestion which may be made looking to the improvement of the publication or the enlargement of its scope of interest and usefulness, will be gratefully considered and appreciated.

The lesson gained from past road building experience is that immediate maintenance lessens the final cost of a road or bridge.

A highway builder's word should be as good as his bond.



## A Word From the Chairman

The question has been asked many times why the State Road Department of Florida did not issue a monthly or quarterly bulletin or magazine, as was being done by nearly all the other State Road Departments throughout the country. Our main reason for failing to do this has been the fact that we had so few finished and connected projects, so located that we could really make a creditable show of our work.

The Department has done a great deal of work, but most of our finished work is in isolated projects in which the general public takes no great interest.

In the West, on Road No. 1, we have built two great bridges and are completing a third, but the full value of this work cannot be realized until the chain of bridges from Pensacola on the west to Jacksonville on the east is completed, so that travel from west to east may pass without let or hindrance. Thus with our road work. We have completed some great projects, but the general public will not be able to appreciate the value of our work until these projects are connected and form a part of trunk lines over which travel may pass from one section of the State to another.

However, our work has now progressed to a point where we feel that we have something to show and something to talk about. We are in position now to show some of the greatest bridge work in the South; we can show you sand-clay roads that are models of that type of road; we can show roads of the different types—concrete, bituminous macadam and sheet asphalt—all of the highest standards of work. These different projects or sections of roads are being connected up so that they no longer seem so lonely, lying off by themselves.

Our Department, as now organized, is fully committed to the view that the first duty of a State Road Department is to build a connected system of State roads. We are fully in accord with that Act of our Legislature which provides that we shall first build six great State roads and only such other roads as are within the Federal System. We feel that we are now in position to show by work accomplished that we are building a trunk line system.

We hope in future to tell the public about this work, and we expect also to let the public know something of the great road work being done by our counties.

### SYMPATHY FOR THE DEPARTMENT

At a recent meeting of the Department, many of the delegates who appeared to urge particular projects expressed their sympathy for the difficult position which the members occupy. But it remained for a prominent South Florida delegate to advance the crowning compassion when he declared:

"Gentlemen, we do sympathize with you in the many problems which confront you. In fact, we have the same sympathy for you that we would have for a cross-eyed, one-legged tight rope walker."

The manner in which this sally was received by the members indicated that they felt he had reached the superlative of good-will.

### APPRECIATION

Florida Highways has received so many kindly words of encouragement that it cannot resist the temptation to express its appreciation to all those who have contributed to make this first issue possible.

When the proposition of publishing the magazine was under discussion before the Department, Mr. F. O. Miller, of Jacksonville, president of the Jacksonville Motor Club, member of the legislature for many years, author of the Miller bill under which the Department is working out its programme, and recognized as one of the most prominent good roads advocates in Florida, requested permission to address the members on the subject of the magazine. Obtaining recognition, Mr. Miller proceeded to urge the Department most heartily to publish the magazine, and declared that in his opinion such a publication would fill a long-felt want. He also state that he knew he could pledge the co-operation of the people of his city

(Continued on Page Sixteen)

### HOMES AND ROADS

(Editorial from New York Tribune)

"It was an interesting coincidence that President Harding on the same day made addresses on homes and on roads, seeing that the two things, while essentially different from each other, are inseparably related. Both, moreover, are just now undergoing changes tantamount to entry into new eras.

The home is the symbol of privacy, the road of publicity. The man without a home is a wayfarer on the road. Yet the home demands the service of the road for intercourse with other homes and with the outside world, and the road has little excuse for existence save to serve the homes along its course. The one is the complement of the other.

The home in this generation is undergoing more radical changes than it knew in centuries before. The enormous development of apartment houses of various types for individual dwellings, the growth of hotel life in place of housekeeping, the problems of domestic service, the invention of household machinery for many tasks and the engagement of women and girls in business instead of housekeeping are all potent factors, the ultimate working out of which is yet to be seen.

Similarly, the development of motor traction in place of horse traction and the conception of roads as forming a coherent general system, instead of being merely local institutions, are leading to a reconstruction of highways on a scale and at an expense that even a generation ago would have been regarded as fantastic extravagance.

But whether in a solitary bungalow or in a series of cubicles on the twentieth floor of a building containing a larger population than a village, home will—it must—remain home, and the concrete-paved high-

(Continued on Page Sixteen)



## The State Convict Road Force

The State Convict Road Force is one of the most valuable assets of the State Road Department. All white and colored State prisoners who are physically able to perform the work incident to road construction, except those prisoners retained for work at the State Prison Farm, compose the road force.

At the expense of the Department the convicts at the several camps are housed, fed, clothed and guarded. In return for this the Department controls a superior class of labor and a working force that can always be depended upon.

An accurate report of the operating expenses of the convict forces is compiled monthly in the auditing department. The following table shows the report for the month of September. The figures are

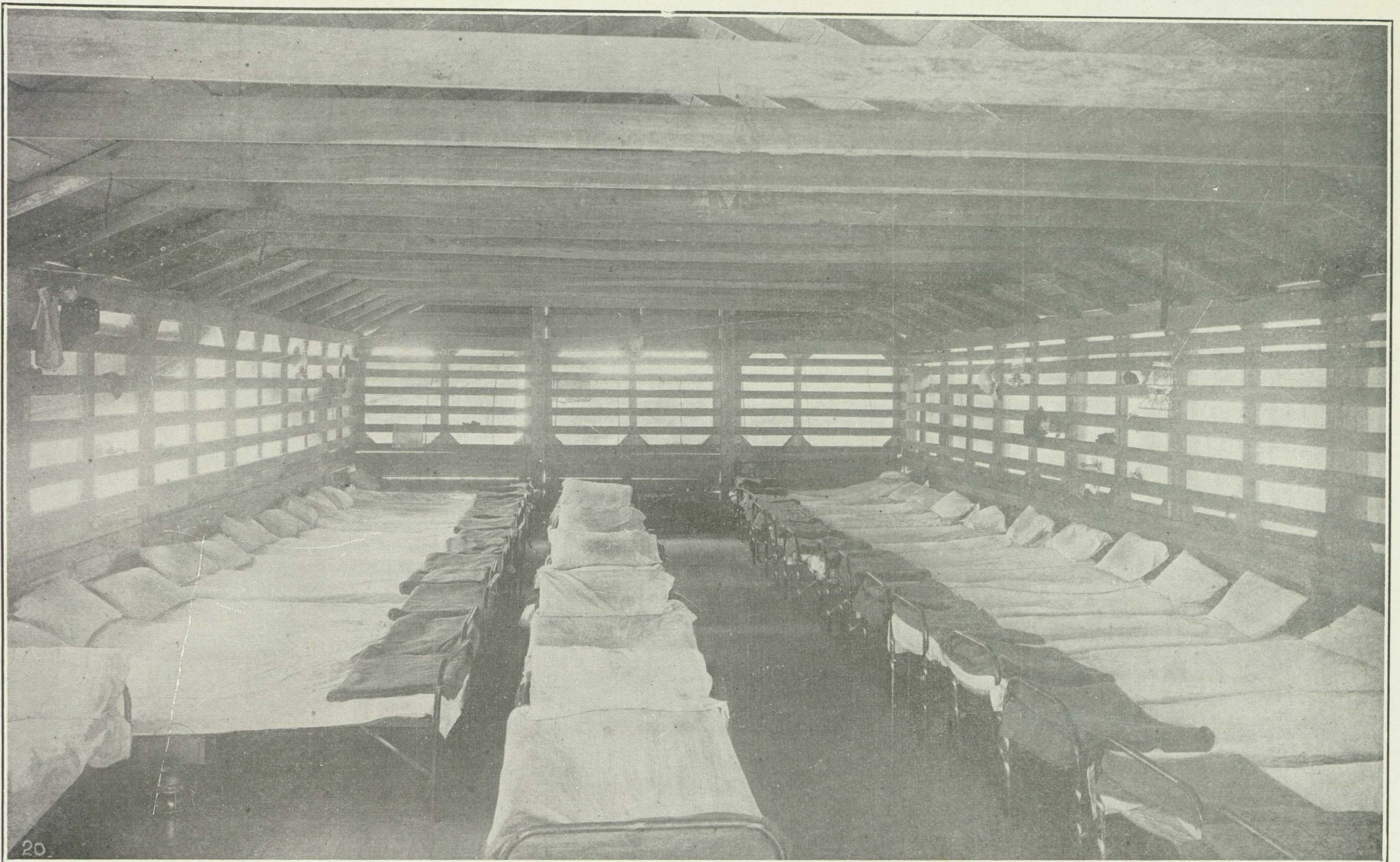
self explanatory, but there are a few points of striking interest. For instance, the report shows that there were 28,111 prisoner days during the month, and for each of these days the Department spent seventy-six cents. This figure includes the salaries of guards, captains and other officers, the cost of clothing issued to prisoners, linen used in camp, discharge fees, rewards, groceries and all other overhead expense. So, with a per capita cost of 76 cents per day, and with a dependable force of able bodied laborers, one may readily gain something of an idea of the value of the several convict camps to the State Road Department. Free labor is worth from two and a half to four dollars per day, depending on the locality.

**STATISTICAL STATEMENT SHOWING COST OF OPERATION OF STATE ROAD CONVICT CAMPS, MONTH OF SEPTEMBER, 1923**

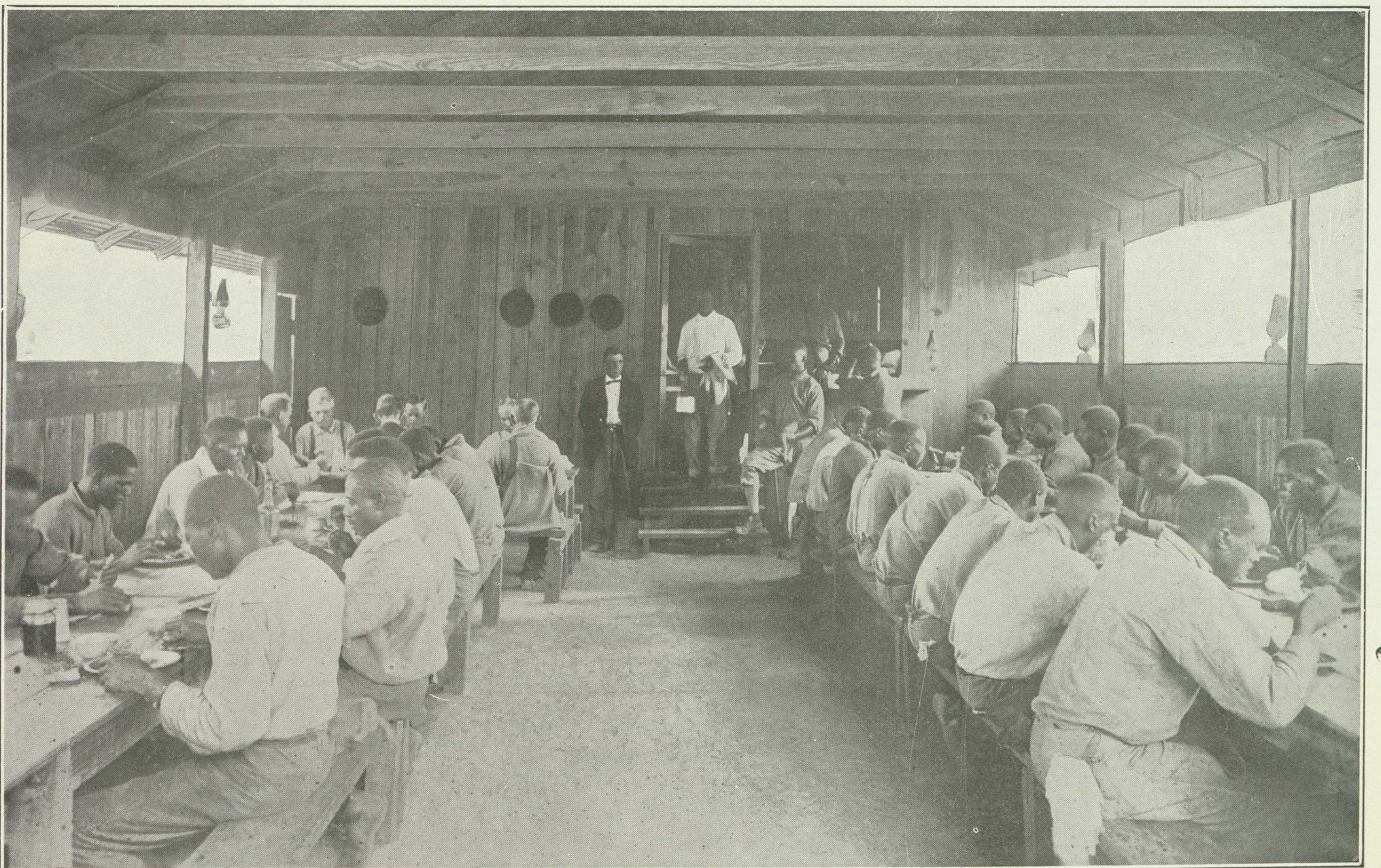
Camp No.	Grocery Account	Salaries	All Other expenses	Total	Average Prisoners in Camp (Daily)	Prisoner Days	Captain and Guards (Days)	Meals Served	Average Cost Per Meal	Overhead Per Man (Daily)	Total Cost Per Man (Daily)
1	\$ 401.44	\$ 297.67	\$ 173.56	\$ 872.67	37.73	1,132	178	4,092	.0981	.42	.71
2	508.66	370.00	206.38	1,085.04	64.40	1,932	240	6,516	.0781	.30	.56
3	498.41	289.49	247.26	1,035.16	43.74	1,312	171	4,449	.1120	.41	.79
4	361.11	335.00	90.10	786.21	36.43	1,093	210	4,340	.0832	.39	.72
5	474.58	324.50	194.96	994.04	49.10	1,473	201	5,022	.0945	.35	.67
6	403.62	300.16	860.78	1,564.56	42.70	1,281	195	4,428	.0912	.90	1.22
7	364.17	200.33	194.26	758.76	32.10	963	116	3,237	.1125	.41	.79
8	485.82	335.00	126.06	946.88	42.63	1,279	210	5,004	.0971	.36	.74
9											
11	148.67	195.00	25.18	368.85	19.73	592	120	2,136	.0696	.37	.62
12	414.19	319.84	423.52	1,157.55	42.67	1,280	197	4,431	.0935	.58	.90
13	409.23	295.00	303.20	1,007.43	44.00	1,320	210	4,590	.0892	.45	.76
15	616.70	335.00	195.96	1,147.66	52.30	1,569	210	5,337	.1155	.34	.73
16	572.50	321.17	142.29	1,035.96	53.37	1,601	241	5,904	.0970	.29	.65
17											
18	676.09	307.00	182.24	1,165.33	52.80	1,584	186	5,400	.1252	.31	.74
19	389.10	295.33	153.17	837.60	40.00	1,200	176	4,128	.0943	.37	.70
22	530.47	293.00	392.55	1,216.02	51.77	1,553	174	5,181	.1024	.44	.78
23											
26	382.05	300.00	189.63	871.68	43.80	1,314	180	4,482	.0852	.37	.66
27	711.13	338.50	735.70	1,785.33	49.73	1,492	216	5,124	.1388	.72	1.20
28	495.17	269.50	55.85	820.52	55.77	1,673	231	5,712	.0867	.19	.49
29	186.54	65.00	106.67	358.21	10.00	300	30	990	.1884	.57	1.19
30	443.12	291.83	137.46	872.41	42.80	1,284	173	4,371	.1014	.33	.68
31	231.30	273.33	183.51	688.14	29.47	884	200	3,252	.0711	.52	.79
Total	\$ 9,704.07	\$ 6,351.65	\$ 5,320.29	\$ 21,376.01	937.03	28,111	4,065	98,126	.0889	.42	.76

The second table is the report of the operation of the State road convict camps for the first nine months of the year, from January first, through September thirtieth. It will be seen that the average daily cost of a prisoner for one day is seventy cents, and that during this time there were 272,037 prisoner days:





Convict Sleeping Quarters as Provided by the State Road Department.



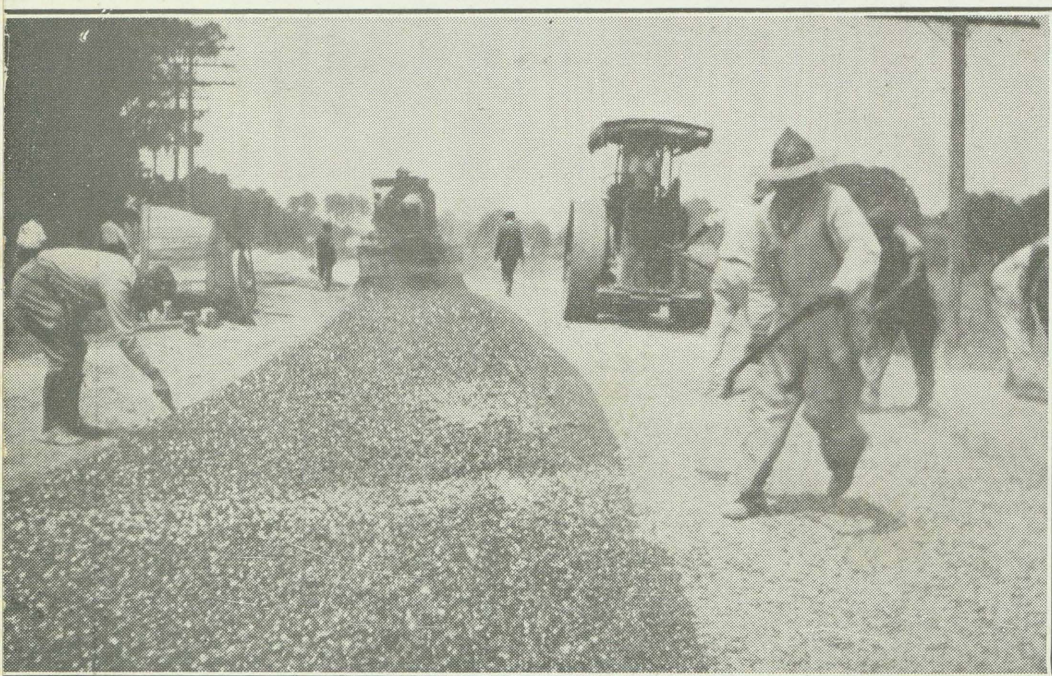
"Chow" in a State Road Convict Camp.



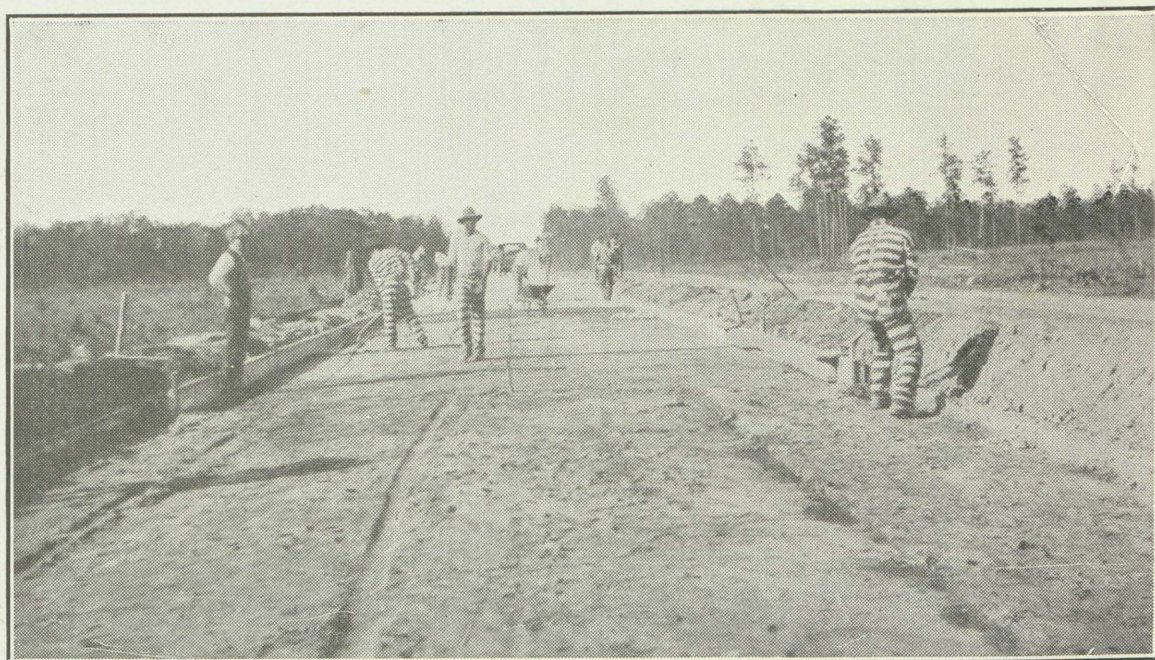
**STATISTICAL STATEMENT SHOWING COST OF OPERATION OF STATE ROAD CONVICT CAMPS, NINE MONTHS, TO SEPTEMBER 30, 1923**

Camp No.	Grocery Account	Salaries	All Other Expenses	Total	Average Prisoners in Camp (Daily)	Prisoner Days	Captain and Guards (Days)	Meals Served	Average Cost Per Meal	Overhead Per Man (Daily)	Total Cost Per Man (Daily)
1	\$ 3,865.20	\$ 2,920.72	\$ 2,501.15	\$ 9,287.07	45.72	12,482	1,829	44,391	.087	.43	.74
2	4,307.95	3,215.95	3,152.14	10,676.04	51.28	13,999	2,089	48,699	.089	.45	.76
3	4,192.82	2,838.41	2,583.19	9,614.42	47.27	12,905	1,757	43,986	.095	.42	.75
4	3,307.84	2,891.60	1,282.30	7,481.74	35.87	9,793	1,806	36,409	.091	.43	.76
5	4,154.91	2,770.98	2,743.44	9,669.33	53.59	14,629	1,791	51,027	.081	.38	.66
6	4,438.16	2,895.65	2,157.56	9,491.37	51.60	14,087	1,887	50,185	.088	.36	.67
7	3,066.53	2,354.68	1,172.03	6,593.24	37.30	10,182	1,626	35,424	.087	.35	.65
8	5,155.13	4,058.22	1,892.02	11,105.37	60.66	16,559	2,783	59,193	.087	.36	.67
9	237.42	458.87	45.52	741.81	10.65	628	235	2,589	.092	.80	1.18
11	1,618.31	1,787.12	550.91	3,956.34	19.00	5,187	1,120	18,498	.087	.45	.76
12	3,743.79	2,806.49	3,070.65	9,620.93	44.17	12,058	1,760	41,454	.090	.49	.80
13	4,620.08	2,901.28	1,792.88	9,314.24	55.68	15,200	2,010	51,630	.089	.31	.61
15	4,779.20	3,217.96	1,826.96	9,824.12	66.52	18,160	2,069	61,662	.078	.28	.54
16	3,684.47	2,601.37	1,587.83	7,873.67	43.45	11,863	1,879	41,301	.089	.35	.66
17	2,342.85	1,787.69	683.64	4,814.18	42.30	7,657	1,190	27,558	.085	.32	.63
18	3,641.59	2,514.19	2,124.05	8,279.83	44.39	12,119	1,563	41,775	.087	.38	.68
19	3,457.70	2,504.06	2,160.00	8,121.76	38.43	10,490	1,463	37,204	.093	.44	.77
22	5,008.72	2,706.78	2,438.42	10,153.92	55.93	15,270	1,727	50,991	.098	.34	.65
23	1,677.63	1,756.48	377.24	3,811.35	24.58	4,597	1,029	16,878	.099	.46	.83
26	3,750.11	2,692.10	1,236.66	7,678.87	44.74	12,213	1,631	41,572	.090	.32	.63
27	6,111.22	3,214.23	3,466.59	12,792.04	58.26	15,906	2,068	53,922	.113	.42	.80
28	4,186.40	2,383.42	1,922.65	8,492.47	51.92	14,173	1,980	47,916	.087	.30	.60
29	2,652.30	1,395.28	950.50	4,998.08	22.55	6,157	911	21,300	.125	.38	.81
30	1,411.06	1,042.72	1,082.09	3,535.87	34.89	4,257	647	14,682	.096	.50	.83
31	463.23	461.88	222.48	1,147.59	28.55	1,466	343	5,427	.085	.47	.78
Total	\$85,874.62	\$60,178.13	\$43,022.90	\$189,075.65	996.47	272,037	39,193	945,673	.091	.38	.70

Operation of camps: No. 9, 59 days; No. 17, 181 days; No. 23, 187 days; No. 30, 122 days; No. 31, 51 days. All other camps, 273 days.



Applying Asphalt to 16-foot Bituminous Macadam Road.



Preparing Sub-Grade on Federal Aid Project No. 32 with Convict Labor.

### GASOLINE TAX

The estimated yield from fuel consumption taxes now levied on automobile owners in 35 States will be about \$50,000,000 in twelve months. There's one consolation for the motorist who pays the new tax: Most of the sum will be applied to road improvement, and the \$50,000,000 will be the nucleus for

Federal aid appropriations that will run up to approximately a billion dollars for better roads. States in which the fuel tax applies collect from one cent to three cents a gallon. Of the "big four" in point of cars—New York, Ohio, Pennsylvania and California—the first two have no fuel tax as yet. Each of these States registers over 825,000 automotive vehicles.—Georgia Highways.



## Business Transacted by the State Road Department at its Quarterly Meeting

The fourth quarterly meeting of the State Road Department convened at the offices of the Department in Tallahassee, at ten o'clock A. M., October 26th, 1923, with all members present.

J. L. Cresap, Acting State Highway Engineer, and Ella Creary Thompson, Secretary, were also in attendance.

The minutes of the third quarterly meeting were read and, upon motion, were adopted as read.

### Report of Chairman

The report of the Chairman setting forth the activities of the Department since the last meeting was read, approved and ordered filed.

### Ratification of Contracts Awarded

The following contracts were reported awarded by the Chairman, a vote of the members having been given by mail:

Project 564, Charlotte County, Road No. 5, to Boone and Wester.

Project 523, Okeechobee County, Road No. 8, to M. J. Cole.

Project 545, Hernando County, Road No. 5, to Broadbent & Groeting.

Project 36-B, St. Lucie County, Road No. 4, to C. F. Lytle.

Project 37-E, Alachua County, Road No. 2, to Wm. P. McDonald Construction Company.

Project 37-A, and Project 37-C, Alachua County, Road No. 2, to F. W. Long & Company.

Upon motion of Mr. Corry, seconded by Mr. Green, the following resolution was adopted:

**RESOLVED:** That the action of the Chairman in awarding contracts listed above is hereby approved and ratified by the Board.

### Contracts To Be Let

The following contracts are now in the hands of the contractors and will soon be returned to this office for execution on the part of the Department:

Project 37-D, Alachua County, Road No. 2, to Florida Drainage and Construction Company.

Project 40-A, Brevard County, Road No. 4, to C. F. Lytle.

Project 40-D, Brevard County, Road No. 4, to James Y. Wilson.

Project 597, Volusia County, Road No. 4, to James Y. Wilson.

Upon motion of Mr. Green, seconded by Mr. Schilling, the following resolution was adopted:

**RESOLVED:** That the Chairman is hereby authorized to execute the contracts listed above on the part of the Department as soon as same are received from the several contractors.

### Project 36-B

#### ST. LUCIE COUNTY

Upon motion of Capt. Hillman, seconded by Mr. Green, the following resolution was adopted:

**WHEREAS:** It has been deemed advisable to change the type of construction for which contract was first awarded, same being that of bituminous

macadam, on Project 36-B, Road No. 4, St. Lucie County; Now, therefore, be it

**RESOLVED:** That a contract be awarded C. F. Lytle, Jacksonville, Florida, for the construction of said project of concrete rather than of bituminous macadam, and the Chairman is hereby authorized to execute such a contract on behalf of the Department.

### Salaries of Division Engineers

Upon motion of Mr. Green, seconded by Mr. Corry, the following resolution was adopted:

**WHEREAS:** The salaries being paid the Division Engineers of the State Road Department are considered too low; now, therefore be it

**RESOLVED:** That a request be made of the Governor to approve an increase in the salaries of the Division Engineers up to \$300 per month.

### Salary of Acting State Highway Engineer

Upon motion of Mr. Corry, seconded by Mr. Schilling, the following resolution was adopted:

**WHEREAS:** Mr. J. L. Cresap has been acting in the capacity of State Highway Engineer since the resignation of Mr. Wm. F. Cocke, which was effective August 8th, 1923, in a most efficient and satisfactory manner; now, therefore, be it

**RESOLVED:** That the salary of the former State Highway Engineer be paid to Mr. Cresap, said salary to begin from the date Mr. Cresap became Acting State Highway Engineer.

### Appointment of Attorney for the Board

Upon motion of Capt. Hillman, seconded by Mr. Corry, the following resolution was adopted:

**WHEREAS:** Under an Act of the Legislature of 1923, the State Road Department is authorized to employ the services of an attorney; now, therefore, be it

**RESOLVED:** That Judge Ben A. Meginniss is hereby elected to serve in the capacity of attorney for the Board; at a salary of \$3,500 per year.

### St. Mary's River Bridge

Upon motion of Capt. Hillman, seconded by Mr. Corry, the following resolution was adopted:

**BE IT RESOLVED:** That the construction of a bridge across the St. Mary's River at Wilds Landing on Road No. 3 in Nassau County, Florida, be and the same is hereby authorized; and be it further

**RESOLVED:** That the sum of \$100,000.00, or as much thereof as may be necessary be and is hereby appropriated and set aside to defray the cost of construction of the portion belonging to the State of Florida; and be it further

**RESOLVED:** That the Chairman is hereby authorized and directed to confer with the proper authorities of the State of Georgia, and take all necessary steps and make all necessary arrangements for the building of such bridge.

### Clay County—Road No. 3

Upon report of the Chairman upon the condition of Road No. 3 in Clay County from Green Cove Springs to the Duval County line, which report was



requested at the last meeting of the Department, the following resolution was offered by Capt. Hillman, seconded by Mr. Schilling and adopted:

**RESOLVED:** That the Chairman is hereby instructed to expend not more than \$50,000 in repairing Road No. 3 in Clay County, on its present location, from the Duval County line to Green Cove Springs.

#### **Manatee River Bridge—Road No. 5**

Upon motion of Mr. Green, seconded by Mr. Corry, the following resolution was adopted:

**WHEREAS:** At a former meeting of the State Road Department the State Highway Engineer was directed to make a survey and get up plans for the construction of a bridge across the Manatee River between Bradentown and Palmetto, on Road No. 5, and these plans being now completed, be it

**RESOLVED:** That the Chairman is hereby authorized to proceed with the construction of said bridge.

#### **Project 562-A—McCormick and Delaney Contract**

The Chairman reported to the Board that satisfactory progress was not being made on Project 562-A, a section of Road No. 8 in Highlands County, under contract with McCormick and Delaney, and that he had called upon the bonding company to take over the work.

Upon motion of Mr. Corry, seconded by Mr. Green, the following resolution was adopted:

**RESOLVED:** That the action of the Chairman in calling upon the bonding company to take over and complete Project 562-A is hereby ratified and confirmed by the Board.

#### **Madison County—Road No. 1**

Upon motion of Capt. Hillman, seconded by Mr. Schilling, the following resolution was adopted:

**RESOLVED:** That the Chairman be directed to advertise for bids for the construction of a sand-clay road on that section of Road No. 1 from Madison to Greenville.

#### **Jefferson County—Road No. 1**

Upon motion of Capt. Hillman, seconded by Mr. Schilling, the following resolution was adopted:

**RESOLVED:** That the Chairman is hereby directed to advertise for bids for the construction of a sand-clay road on that section of Road No. 1 from the Aucilla River to Monticello as soon as the survey is completed, which time is estimated to be within thirty days.

#### **Jefferson-Leon Counties—Road No. 1**

The following motion was offered by Capt. Hillman, seconded by Mr. Schilling and adopted:

**RESOLVED:** That the Chairman is hereby directed to have the survey of Road No. 1 from Monticello to Tallahassee made by January 1st, 1924, with a view to advertising for bids for the construction of a sand-clay surface on this section of road.

#### **Pasco County—Road No. 5**

Upon motion of Mr. Green, seconded by Mr. Corry, the following resolution was adopted:

**RESOLVED:** That the Chairman be directed to advertise for bids for rock base, with surface treatment, on Road No. 5 across Pasco County.

#### **Sarasota County—Road No. 5**

Upon motion of Mr. Green, seconded by Mr. Corry, the following resolution was adopted:

**RESOLVED:** That the Chairman is hereby instructed to advertise for bids for the construction of a local crushed rock or marl base on that section of Road No. 5 in Sarasota County from the Myakka River to the Charlotte County line.

#### **Manatee County—Road No. 5**

Upon motion of Mr. Green, seconded by Mr. Corry, the following resolution was adopted:

**RESOLVED:** That the convict force now being used in the construction of Project 17 in Manatee County be used in the construction of that section of Road No. 5 between Ellenton and Palmetto, as soon as Project 17 is completed.

#### **Highlands County—Road No. 8**

Upon motion of Mr. Green, seconded by Mr. Schilling, the following resolution was adopted:

**RESOLVED:** That this Department hereby appropriates \$200,000 for the purpose of completing the hard surfacing on that section of Road No. 8 in Highlands County, between Sta. 422, south of Lake Stearns and Township line between Townships 35 and 36, a distance of 5.37 miles, and to improve that section of Road No. 8 between Lake Annie and the Kissimmee River, it being understood that the county funds amounting to \$100,000 now being spent on this latter section must be spent in such a manner as to comply with the plans and specifications of this Department.

It being further understood that this Department will not be called upon to pay out of any of the above appropriations until after June 30th, 1924, and that such funds as will be needed to carry on said work will be advanced by certain interested parties until the date above mentioned.

#### **Polk County—Road No. 8**

Upon motion of Mr. Green, seconded by Mr. Corry, the following resolution was adopted:

**RESOLVED:** That the Chairman is authorized to have three foot rock shoulders placed on Road No. 8, Polk County, from Haines City to Frost Proof.

#### **Suwannee River Bridge—Road No. 1**

Upon motion of Mr. Corry, seconded by Mr. Green, the following resolution was adopted:

**WHEREAS:** The Suwannee River Bridge at Ellaville will be constructed upon State Road No. 1 which forms a part of the Seven Percent System of Florida, and the State Road Department is desirous of obtaining Federal Aid to assist in the construction of this bridge; now, therefore, be it

**RESOLVED:** That this Department does hereby allocate to Suwannee County Federal Aid funds amounting to one-half the cost, to be used in the construction of this bridge across the Suwannee River at Ellaville; and, be it further

**RESOLVED:** That the State Road Department does hereby pledge that the necessary funds will be provided by this Department for meeting Federal Aid funds that may be apportioned to the said project; and, be it further

**RESOLVED:** That the State Highway Engineer be directed to proceed with the construction of the said bridge, as soon as plans are completed.



### Sebastian River Bridge—Road No. 4

Upon motion of Mr. Schilling, seconded by Mr. Green, the following resolution was adopted:

WHEREAS: A certain resolution was passed at the meeting of this Department on November 21st, 1922, making the Sebastian River bridge and approaches a Federal Aid project, and certain funds were appropriated for the construction of the same; and

WHEREAS: It has become evident that said sums appropriated or set aside are inadequate to cover the cost of said bridge and approaches; now, therefore, be it

RESOLVED: That the State Treasurer of the State of Florida is hereby authorized and requested to set aside and reserve the sum of \$109,445.16 of the funds provided by Chapter 8576, Acts of 1921, and Chapter 9309, Acts of 1923, Laws of Florida, approved June 7th, 1923, said sum of \$109,445.16, or as much thereof as may be necessary, being for the purpose of meeting an equal amount of Federal Aid funds, said State and Federal funds to be used jointly for the construction of a bridge across Sebastian River on State Road No. 4, between Brevard and St. Lucie Counties, Florida:

PROVIDED: The Secretary of Agriculture of the United States shall approve said project as provided in the Federal Aid Road Act, the same being an Act of Congress, approved June 11th, 1916, and all amendments thereto.

### Purchase of Car

The Chairman requested approval of the Board to purchase a car for his use in inspecting State road work.

Upon motion of Mr. Corry, seconded by Capt. Hillman, the following resolution was adopted:

RESOLVED: That the Chairman is hereby authorized to purchase car as he deems advisable for his use in inspecting the work of the Department.

### Road Conference

The Chairman referred to the Board a letter from Mr. P. L. Reed, Professor of Engineering at the University of Florida, in which he requested the co-operation of the State Road Depart-

ment in the holding of a Road Conference at the University in February; and upon motion of Mr. Corry, seconded by Mr. Green, the following resolution was adopted:

RESOLVED: That the Chairman reply to Prof. Reed, pledging the support of the Department, both as to consultation and attendance, to make the conference a success.

### Meeting of the American Association of State Highway Officials at New Orleans

The Chairman read an invitation from the American Association of State Highway Officials to attend a meeting of the Association at New Orleans, La., December 3, 4, 5, and 6, 1923.

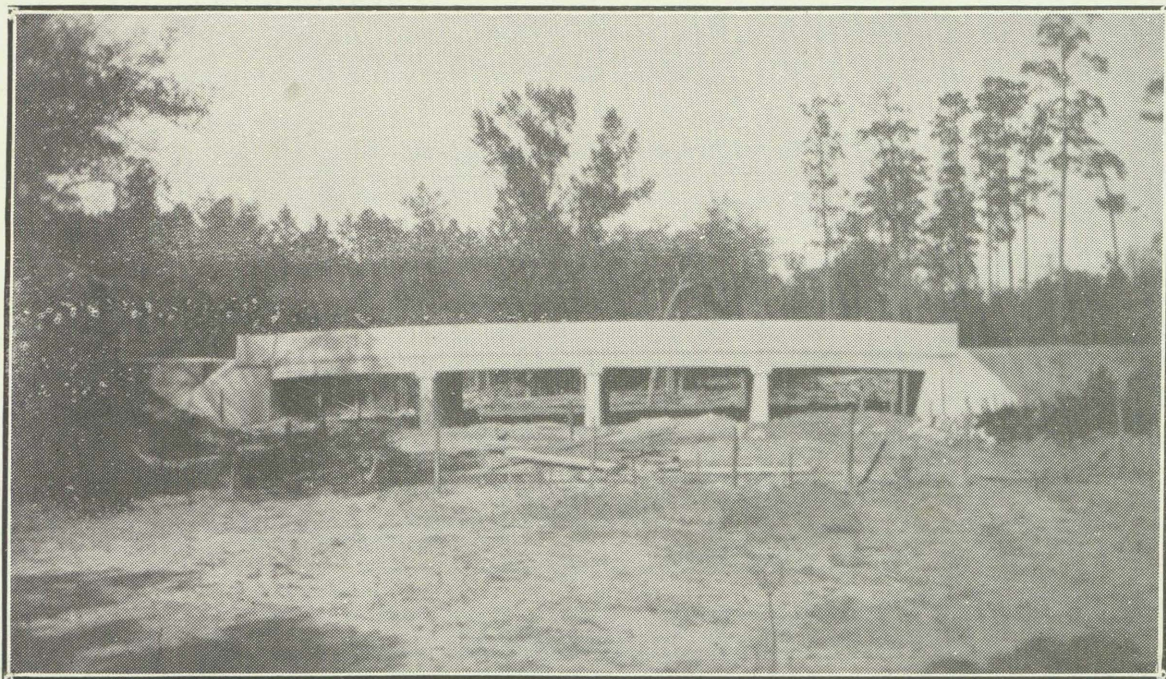
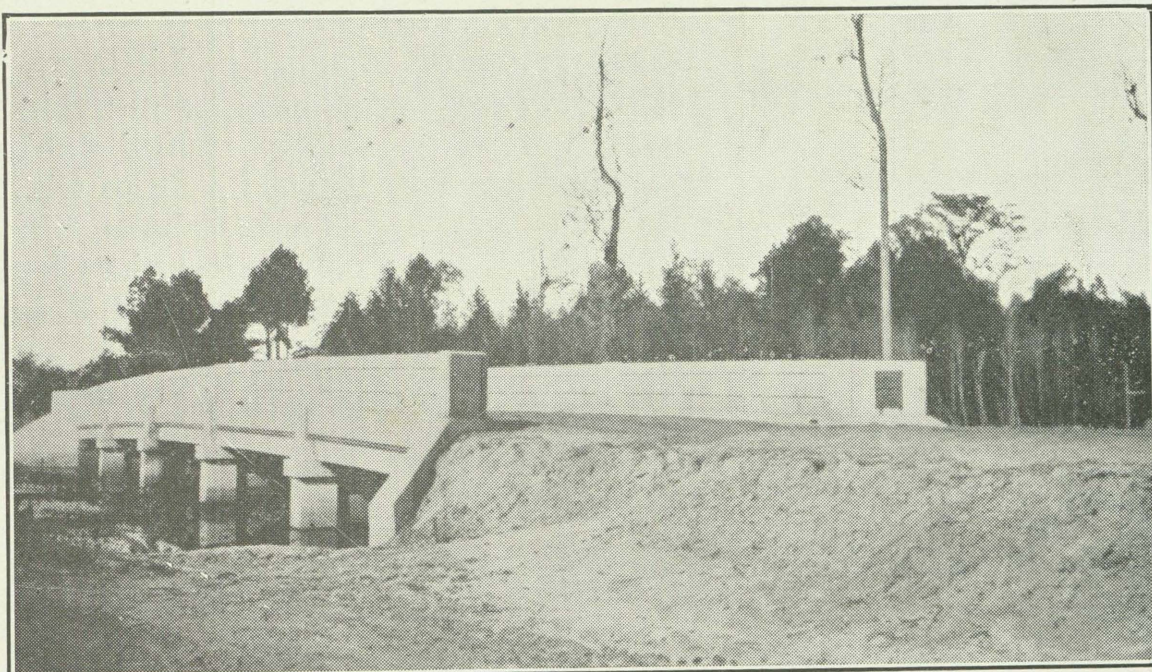
Upon motion of Mr. Corry, seconded by Mr. Green, the following resolution was adopted:

RESOLVED: That the Chairman accept the invitation of the American Association of State Highway Officials, and that the Chairman, the State Highway Engineer, the Bridge Engineer, and as many of the members of the Board as can possibly do so, attend this meeting, the expenses incident to be paid by the Department.

### Dedication of Alapaha River Bridge

The Chairman reported a number of communications from the Chamber of Commerce of Hamilton County in which it was requested that permission be

(Continued on Page Eighteen)



Two views of Alligator Rock Creek Bridge, on Road No. 4, near Callahan. This little bridge is a work of art from an engineering standpoint and it is one of the beauty spots on the north end of State Road Number Four.



# Summary of Projects Completed, Under Construction and Proposed.

## FEDERAL AID PROJECTS

Project No.	Road No.		County		Division
	Old	New			
1	1	1	Okaloosa	Milligan to Holt.....	1
2	2	2	Osceola	Kissimmee to Laughman.....	5
3	1	1	Gadsden-Jackson	Apalachicola River Bridge.....	1
4	2	2	DeSoto	Arcadia to Station 162.....	5
5	107	18	DeSoto	Arcadia West .....	5
6	1	1	Madison	Greenville to Aucilla River.....	2
7A	2	2	Hamilton	Jasper to Jennings.....	2
7B	2	2	Hamilton	Alapaha River Bridge.....	2
8	2	2	Alachua	Columbia County Line to Burnetts Lake.....	4
9	1	1	Holmes	Ponce de Leon to Argyle.....	1
11	1	1	Baker, Nassau, Duval....	Baldwin West to Station 948.....	2
13	2	2	Orange	Plymouth to Mt. Dora.....	5
14	1	1	Santa Rosa	Blackwater River Bridge.....	1
15	2	2	DeSoto	Arcadia to Carlstrom Field.....	5
16	107	18	DeSoto	Project 4 West.....	5
17	5	5	Manatee	Bullard's Creek to Hillsboro County Line.....	5
18	3	3	Putnam	Sisco to Volusia County Line.....	4
19A	2	2	Hamilton	Suwannee to Genoa.....	2
19B	2	2	Hamilton	Swift Creek & Gulley Bridges.....	2
20	1	1	Holmes-Washington	Choctawhatchee River Bridge.....	1
21A	1	1	Baker	Glen St. Marys East to Station 65.....	2
21B	1	1	Baker	Little St. Marys River Bridge.....	2
22	1	1	Baker	Columbia County Line to Project 11.....	2
23	1	1	Duval	End Jacksonville Brick to Baldwin.....	2
24	1	1	Columbia	Lake City to Baker County Line.....	2
26	2	2	Columbia	Lake City to Suwannee River.....	2
27	2	2	Columbia	Lake City to 12.36 Mi. South.....	2
29A	5	5	Hillsboro	Bull Frog Bridges Nos. 1 and 2.....	5
29B	5	5	Hillsboro	Little Manatee Bridge.....	5
30	2	2	Columbia-Hamilton	Suwannee River Bridge.....	2
31	2	2	Hamilton	Genoa to Jasper.....	2
32	4	4	Nassau	Duval County Line to 5 Mi. N. Callahan.....	2
33	2	2	Alachua	Burnett's Lake to Gainesville.....	4
34	7	7	Escambia	Pensacola to Roberts.....	1
35	1	1	Escambia	Pensacola to Nunez Ferry .....	1
36A	4	4	St. Lucie	Vero to Wabasso .....	3
36B	4	4	St. Lucie	Wabasso to Sebastian River.....	3
37	2	2	Alachua	Gainesville to Marion County Line.....	4
38	1	1	Escambia	Escambia Bay Bridge.....	1
39	4	4	Brevard-St. Lucie	Sebastian River Bridge.....	3
40	4	4	Brevard	Sebastian River to Volusia County Line.....	3
41	4	4	Dade	Miami to Broward County Line.....	3
42	4	4	Volusia	Brevard County Line to Rose Bay.....	3

## STATE AID PROJECTS

500	110	20	Bay	Panama City to Jackson County Line.....	1
501	6	6	Calhoun	Jackson County Line to Wewahitchka.....	1
502	6	6	Calhoun	Franklin County Line, North to Canal.....	1
503	2	2	Charlotte	DeSoto County Line to Lee County Line.....	5
504	1	1	Columbia	Lake City to Wellborn.....	2
505	2	2	Columbia	Project 27 to Alachua County Line.....	2
506	4	0	Dade	Homestead to Royal Palm State Park.....	3
507	4	4	Flagler-Volusia	Bunnell to End of Reily's Asphalt.....	4
508	1	1	Gadsden	East Approach Victory Bridge.....	3
509	1	1	Gadsden	Overhead Crossing at Florence.....	1
510	5	5	Hillsboro	Little Manatee River to Tampa Brick.....	5
511	5	5	Hillsboro	Hillsboro County Line—South.....	5



STATE AID PROJECTS.—(Continued).

Project No.	Road No.		County		Division
	Old	New			
512	5	5	Hillsboro	Little Manatee River to Manatee County Line.	5
513	8	8	Highlands	Lake Annie to Kissimmee River.....	5
514	1	1	Jackson	Apalachicola River to Marianna.....	1
515	110	20	Jackson	Bay County Line to Cottondale.....	1
516	1	1	Jackson	West Approach to Victory Bridge.....	1
517	1	1	Jefferson	Lloyd Bridge .....	1
518	109	29	LaFayette	Mayo to Branford.....	2
519	5	5	Manatee	Bradentown to Project No. 17.....	5
520	2	2	Marion	Bellevue to Lake County Line.....	4
521	4	4	Nassau	Project No. 32 to Georgia State Line.....	2
522	135	3	Nassau	Yulee to Wild's Landing.....	2
523	8	8	Okeechobee	Highlands Co. Line to St. Lucie Co. Line.....	3
524	105	15	Pasco	New Port Richey to Hudson.....	5
525	130	17	Pinellas	Clearwater to Oldsmar.....	5
526	105	15	Pinellas	Seminole Bridge .....	5
527	130	17	Pinellas	Safety Harbor Bridge.....	5
528	120	0	Seminole	Wekiva Bridge .....	5
529	1	1	Suwannee	Live Oak to Suwannee River.....	2
530	4	4	St. Johns	Duval County Line to Flagler County Line....	4
531	109	29	Taylor	Perry to Lafayette County Line.....	2
532	3	3	Volusia	Putnam County Line to DeLeon Springs.....	4
533	1	1	Suwannee	Wellborn to Live Oak.....	2
534	125	24	Brevard	Melbourne to Osceola County Line.....	3
535	109	29	LaFayette	Taylor County Line to Mayo.....	2
536	1	1	Gadsden	Florence to Quincy.....	1
537	124	23	Marion	Bellevue to Sumter County Line.....	4
538	2	2	Marion	Alachua County Line to Lowell.....	4
539	5	5	Marion	Dunellon to Levy County Line.....	4
540	...	...			
541	2	2	Marion	Lowell to Ocala.....	4
542	2	2	Hardee	Bowling Green to Wauchula.....	5
543	3	3	Seminole	Sanford to Orange County Line.....	5
544	5	5	Pasco	Hillsboro Co. Line to Hernando Co. Line.....	5
545	5	5	Hernando	Hernando County Line to Brooksville.....	5
546	4	4	Brevard	Sharps to Titusville.....	3
547	...	...			
548	5	5	Levy	Alachua County Line to Marion County Line.	4
549	1	1	Escambia	Pensacola to Project 38.....	1
550	2	2	Lake	.....	4
551	127	25	Hendry-Lee	Palm Beach County Line—West.....	5
552	128	27	Collier	Dade County Line—West.....	5
553	2	2	Marion	Ocala to Bellevue.....	4
554	4	4	Brevard	Bonaventure to Eau Gallie.....	3
555	105	15	Hernando	Brooksville to Aripeka.....	5
556	1	1	Escambia	Escambia Bay Survey.....	1
557	1	1	Gadsden	Approach to Project No. 3.....	1
558	4	4	Flagler	St. Johns County Line to Bunnell.....	4
559	4	4	Brevard	Elbow Creek Bridge.....	3
560	6	6	Calhoun	Canal to Wewahatchka.....	1
561	102	13	Levy-Alachua	Archer to Bronson.....	4
562	8	8	Highlands	Lake Annie to Station 422 South Lake Stearns.	5
562A	8	8	Highlands	Station 422 to Township Line 35 and 36.....	5
562B	8	8	Polk & Highlands	Frostproof to Avon Park.....	5
562C	8	8	Highlands	Avon Park to Sebring.....	5
562D	8	8	Highlands	Sebring to Township Line 35 and 36.....	5
563	2	2	Osceola	Project 2 to Polk County Line.....	5
564	5	5	Charlotte	Sarasota County Line to Lee County Line.....	5
565	1	1	Madison	Suwannee River to Madison.....	2
566	122	0	Lake	Approach to Dead River Bridge.....	4
567	1	1	Walton-Okaloosa	Argyle to Crestview.....	1
568	1	1	Jackson	Pope's Lake Bridge.....	1
569	5	5	Sarasota	Manatee Co. Line to Charlotte Co. Line.....	5



STATE AID PROJECTS.—(Continued).

Project No.	Road No.		County		Division
	Old	New			
570	5	5	Manatee	Bradentown to Sarasota County Line.....	5
571	1	1	Madison	Greenville to Madison.....	2
572	102	13	Bradford	Starke to Lawtey.....	2
573	2	2	Orange	Plymouth to Osceola County Line.....	5
574	9	9	Madison	Madison to Georgia State Line.....	2
575	3	3	Putnam	Sisco to Dunn's Creek.....	4
576	5	5	Sarasota	Myakka River to Charlotte County Line.....	5
577	108	19	Taylor	Salem to Steinhatchee River.....	2
578	1	1	Leon-Gadsden	Ocklocknee River Bridge.....	1
579	1	1	Holmes	Westview to Ponce de Leon.....	1
580	108	19	Dixie	Steinhatchee River—South.....	2
581	5	5	Hillsboro	6 Mi. Creek to Project 510.....	5
582	8	8	Highlands & Okeechobee..	Kissimmee River Bridge.....	5
583	5	5	Hillsboro	Sulphur Springs Bridge.....	5
584	125	24	Osceola	Fla. East Coast R. R. to Deer Park.....	5
585	1	1	Santa Rosa	Milton to Project 38.....	1
586	1	1	Jackson-Washington	Marianna to Chipley.....	1
587	109	0	Columbia	Fort White to Itchtucknee River.....	2
588	3	3	Putnam	Through Crescent City.....	4
589	5	5	Lee	Charlotte Co. Line to Caloosahatchee River....	5
590	...	1	Santa Rosa	Between Project 1 and Project 14.....	1
591	...	2	Hardee	Peace River to DeSoto County Line.....	5
592	...	6	Franklin	Apalachicola to Calhoun County Line.....	1
593	...	5	Manatee	Manatee River Bridge.....	5
594	...	13	Bradford	Starke to Hampton.....	2
595	...	3	Volusia	DeLeon Springs to DeLand.....	4
596	...	10	Leon	Woodville to Wakulla County Line.....	1
597	...	4	Volusia	Port Orange to Brevard County Line.....	4
598	...	1	Jefferson	Aucilla River and Monticello.....	1
599	...	2	DeSoto	Carlstrom Field to Charlotte County Line.....	5
600	...	4	St. Johns	Duval County Line to St. Augustine.....	4
601	...	4	St. Johns	St. Augustine to Hastings.....	4
602	...	4	St. Johns	Hastings to Flagler County Line.....	4
603	...	14	St. Johns & Putnam.....	East Palatka to Hastings.....	4
604	...	4	Volusia	New Smyrna to Rosa Bay.....	4
605	...	1	Jefferson	Aucilla River to Monticello.....	1

AN HISTORICAL RESUME OF THE STATE ROAD DEPARTMENT

Continued from Page Five.

January, 1921 to December, 1922:

H. B. Philips, Chairman, State at Large, Jacksonville.

W. J. Hillman, 2d Congressional District, Live Oak.

W. M. Corry, 3rd Congressional District, Quincy.

E. P. Green, 1st Congressional District, Bradentown.

W. W. Clark, 1st Congressional District, Wall Springs.

I. E. Schilling, 4th Congressional District, Miami.

The personnel of the present State Road Department is as follows:

H. B. Philips, Chairman, State at Large, Jacksonville.

W. J. Hillman, 2d Congressional District, Live Oak.

W. M. Corry, 3rd Congressional District, Quincy.

E. P. Green, 1st Congressional District, Bradentown.

I. E. Schilling, 4th Congressional District, Miami.

J. L. Cresap, Acting State Highway Engineer.

Ella Creary Thompson, Secretary.

APPRECIATION

(Continued from Page Seven)

and county, and sincerely hoped that the venture would be made.

Another good friend, Hon. E. S. Matthews of Starke, former Speaker of the House, and member of the last legislature, being solicited for a subscription, placed the matter before his friends as he met them and sent in thirteen paid subscriptions with a letter of helpful encouragement.

To these and the many other friends who loyally supported our venture, Florida Highways extends sincere thanks.

HOMES AND ROADS

Continued from Page Seven.

way thronged with swiftly moving motor cars will—it must—serve the same fundamental purpose that was served by the rural lane along which Dobbin serenely jogged with cart in tow."

Count that day lost

Whose slow descendin' sun

Sees motor trucks sold at cost,

And biznis dun fer fun.

—Walt Mason.



## CRASHES ON SAFETY HIGHWAYS

"These roads ought to be made safer," complained the driver whose car going 50 miles an hour crashed through the guard-rail and off the grade of the smooth, straight road, when the steering knuckle broke.

"Nothing is impossible," remarked the cow as she reached up to bite off her horn.

Reckless driving and speeding—not road conditions—cause nine-tenths of the accidents on the public highways which are fast increasing as traffic grows heavier, according to the bulletin of the Minnesota Highway Department.

That the largest numbers of accidents happen on the best stretches of road is held in the bulletin to prove the contention that dangerous highway conditions seldom are responsible for them. The department obtains reports of all accidents on the highways and makes special investigations of the more serious ones. Safety is a first consideration at all times as evidenced by separation of railroad grade crossings, rounding of curves and clearing of view obstructions, building of guard-rails and posting of warning signs and other safety devices.

But as long as speeding and recklessness is permitted by local officials designated by law to police the highways, the bulletin asserts, accidents probably will multiply.

Sandy spots and loose gravel are not dangerous when an automobile is traveling at a reasonable speed; no road can be safe for the driver who is blinded by glaring headlights or has fallen asleep at the wheel; racing puts danger in the otherwise safest road—experience has demonstrated that the biggest safety factor rests in sane careful driving, says the bulletin.

While many accidents are being blamed to road conditions, it adds, there are complaints also that too much money is being used for warning signs, guard-rails and other devices and in efforts to serve the safety of the public.

Question: "Were you ever pinched for going too fast?"

Answer: "No, but I've been slapped."

The Three Wise Men are: Stop, Look and Listen.—Georgia Highways.

There's nothing will cure a reckless driver like thirty days' observation of the sun through a barred window.—Georgia Highways.

## A MILE OF CONCRETE PAVEMENT

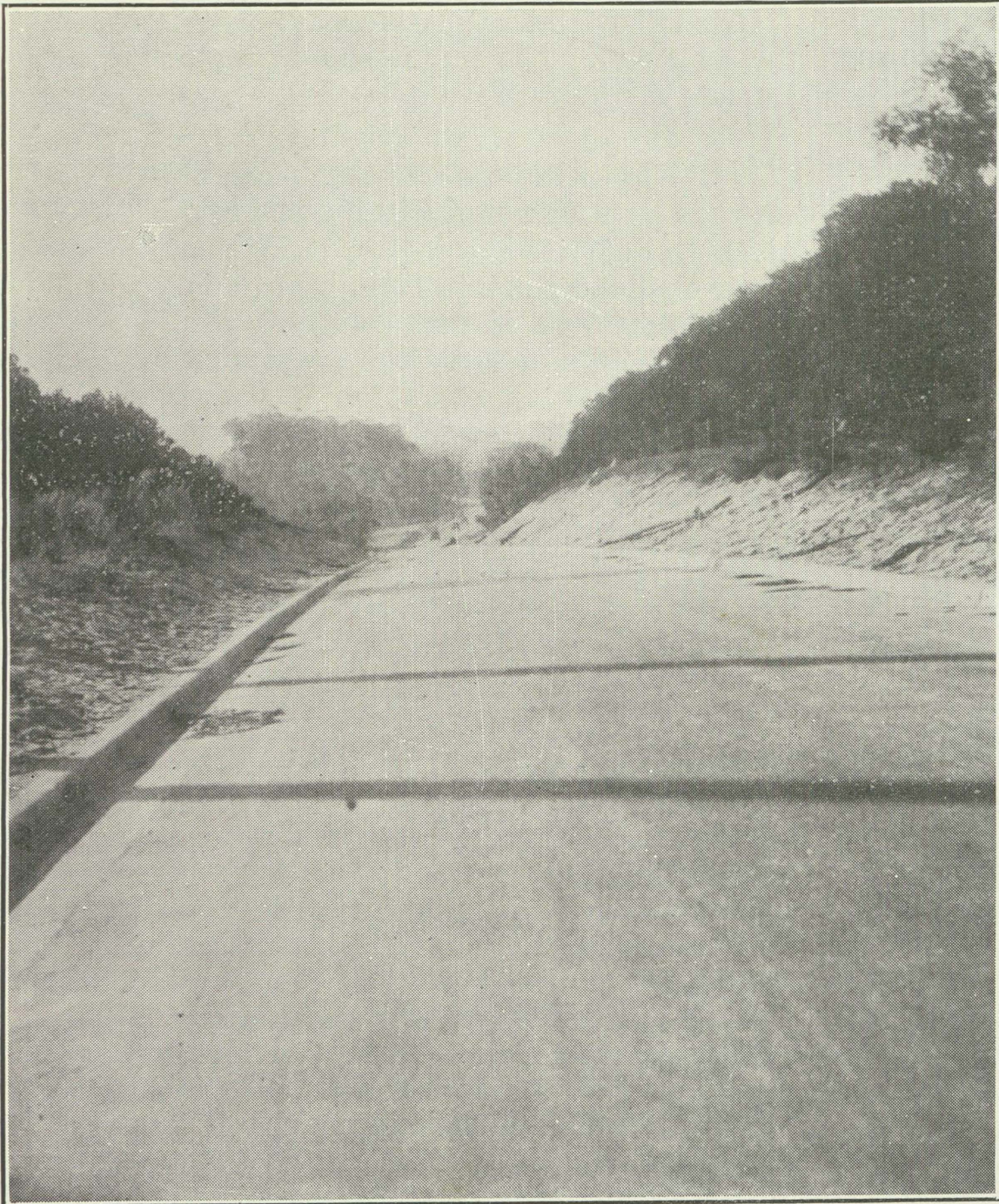
A mile of concrete pavement, 18 feet wide, 7 inches thick at the edges and 8 inches thick at the center, requires 2,249 cubic yards of concrete. This amount of concrete takes 3,913 barrels of Portland cement, 1,102 cubic yards of sand and 1,664 cubic yards of stone.

It is estimated that 30 gallons of water are needed to mix and cure a square yard of concrete pavement, so over 300,000 gallons of water must be furnished for a mile of concrete pavement.

Approximately 4,500 tons of concrete go into the construction. In making 3,913 barrels of cement, over 390 tons of coal are burned at the cement mill. Approximately 19 tons of gypsum are required to regulate the setting time of the material. To get the cement shipped from the mill over 15,600 cloth cement sacks are needed—approximately 15 bales of cotton must be woven into cloth to make these sacks. In the cement quarries about 450 pounds of dynamite were shot off in blasting loose the raw material for making the cement.

For the mile of pavement, 42 cars of sand, 65 cars of stone and 20 cars of cement are used—127 cars for the basic materials.

When it is considered that the equivalent of over 7,000 miles of 19-foot concrete pavements were placed under contract during the past year, the magnitude of the transportation involved can be realized. More than 800,000 freight cars are needed to transport the cement, sand and gravel for this construction.—Kentucky Road Builder.



Project 13, Orange County, Showing Curb and Gutter Section.



## ROADS WORTH BUILDING ARE WORTH MARKING

Today it is not uncommon to expend \$1,000,000 for the construction of a great hotel, but did you ever hear of a company which, after building such a hostelry, refused to spend an additional sum for use in marking and numbering the thousands of rooms in such a building?

Yet such an absurd condition actually may be found in the matter of highway marking. Today it is not uncommon to spend from \$15,000 to \$60,000 per mile for highway construction within the State. But work is stopped before the highway is complete—it is left without a mark or sign of any kind. The road is built, but there are no guiding signs to tell where this road is or where it may lead.

For only a few dollars per mile a guiding system could be erected which would satisfactorily meet all requirements of the highway traveler. If all the money was available which has been spent by automobile clubs, associations, civic organizations, business interests and other such groups in their dissociated efforts to mark the highways, there would be enough and to spare to put in a guiding system which would mark every country road as well as the main traveled ones. And this is what is needed, a system which does mark every road and connects them all under one system of marking—not a half dozen different patched up affairs.

Who should lead the movement for universal highway marking—the traveler, the taxpayers, county officials, state officials? Or is it a combined responsibility? Isn't it time to start something?—Highway Guidance.

## PHILOSOPHY OF THE HIGHWAY

The highway is not simply a road. It is not simply a surface.

It is the assurance of the civilizing influence of better communication between sections.

It is a silent, but persistent factor for the reduction of living costs.

It is an humble, but powerful foe of ignorance for the reason that it makes easily accessible our splendid system of public schools to the people in rural districts.

It is the safeguard of our food supply. It is a guarantee to the public against the prostrating influence of industrial upheaval and interruption to distribution therefrom.

It is the popular open air theater of enjoyment of the family.

It is the text book of nature to our people.

It is the connecting link between the home and the factory.

It is the call to open air; the great physician who makes no charge for his services.

The people who are opposed to good roads oppose them for the same reason that some people oppose our great public school system—they are not informed.—Colorado Highways.

Dyer—I understand your wife suffers from car sickness.

Ryer—Yes, it makes her ill to think we can't afford as good a car as our neighbors.—Ex.

## THE COST OF A MILE OF ROAD

People are prone to think of roads as standardized structures which should be produced at so much per mile. The problem of highway construction costs is not so simple as that, by any means. How much should a mile of highway cost? That is as easy to answer as the abstract question—how much should a house cost?

Before even the ablest authorities can determine how much a mile of road should cost, they must be provided with a vast amount of information with regard to where the mile is to be located, the volume of travel it will receive, the nature of the soil upon which it will be built, the types of loads it will be called upon to carry, etc.

The State of New York has just completed a four-mile stretch of road along the Hudson River at a cost of \$175,000 per mile. Unquestionably it is worth it. The State of New Jersey has spent \$80,000 per mile on the construction of certain sections of the Lincoln Highway which carry an immense volume of traffic. It is worth it. The old macadam road replaced by the new construction was costing the State \$14,500 per mile a year for maintenance. The Lincoln Highway Association spent \$65,000 per mile for the paving on the "Ideal Section" in Indiana. It is a very economical paving for the traffic it is designed to carry. Ten or fifteen thousand dollars a mile spent for the construction of main roads like the Lincoln Way east of Chicago would be an absolute waste of money. It would be thrown away.

Often the most expensive pavement is cheapest in the long run. The public should understand this.—Lincoln Highway Forum.

## Business Transacted by the Department

(Continued from Page Thirteen)

given to dedicate the bridge built over the Alapaha River on Road No. 2 in Hamilton County to the Confederate soldiers of that county.

Upon motion of Mr. Corry, seconded by Mr. Schilling, the following resolution was adopted:

**RESOLVED:** That the State Road Department does hereby approve the naming of the bridge across the Alapaha River on Road No. 2 in Hamilton County the "Confederate Memorial Bridge," and dedicating the same to the Confederate soldiers of the State of Florida, rather than to the soldiers of Hamilton County only.

### Dedication of Kissimmee River Bridge

The Highlands County Chamber of Commerce presented a resolution petitioning the State Road Department to designate the proposed bridge over the Kissimmee River on Road No. 8 as the "Warren G. Harding Memorial Bridge," stating that Okeechobee County and Highlands County were allotting forty acres from each county for a National Park, to be known as the "Warren G. Harding Memorial Park," adjacent to the proposed bridge.

Upon motion of Mr. Green, seconded by Mr. Corry, the following resolution was adopted unanimously:

**RESOLVED:** That the petition of the Highlands County Chamber of Commerce be granted and the Board hereby approves the dedication of the bridge across the Kissimmee River of Road No. 8 as the "Warren G. Harding Memorial Bridge."



### Convict Comp No. 22

Upon motion of Mr. Corry, seconded by Mr. Schilling, the following resolution was adopted:

RESOLVED: That Camp 22 be kept in Jackson County, working eastward from the Washington County line to Marianna.

### Walden Claim

The Chairman presented a claim of Mr. J. A. Waldon, of Bradentown, for damages to his automobile on account of a collision with a road roller belonging to the State Road Department.

Upon motion of Mr. Schilling, seconded by Mr. Green, the following resolution was adopted:

RESOLVED: That the matter of the Walden claim be referred to Judge Meginniss, attorney for the Board.

### Alachua County

The Chairman read a letter from Major Thomas, of Gainesville, in regard to the road from the Putnam County line through Hawthorne to Gainesville, a distance of eighteen miles.

The Board of Bond Trustees of District No. 1 is desirous of obtaining aid in surfacing these eighteen miles, the base of which has been built by the county, they having no money for the surfacing.

Upon motion, duly carried, the matter was referred to the Chairman for investigation.

### Publishing of Florida Highways

The Chairman presented to the Board the matter of editing a magazine, to be known as "Florida Highways"; this magazine to be the official organ of the Department, furthering the interests and dealing with the activities of the Department from month to month.

Upon motion of Mr. Corry, seconded by Mr. Schilling, the following resolution was adopted:

RESOLVED: That the Board wishes to express its hearty approval and co-operation in furthering the publication of such a magazine; and the Chairman is hereby directed to arrange the details in regard to the employment of an editor, fixing of salary, etc.

### Claim of Masters & Mullen Construction Co.—Claim of Converse Bridge Company—Project 3

Mr. Y. L. Watson, representing Masters and Mullen Construction Company and the Converse Bridge Company was heard in regard to the respective claims for payment of certain sums for work done on Project 3, the bridge across the Chattahoochee River.

Upon motion of Mr. Schilling, seconded by Mr. Corry, the following resolution was adopted:

RESOLVED: That the matter of this claim be referred to Judge Meginniss, attorney for the Board.

### Withdrawal of Federal Aid Project—Nassau County

Upon motion of Mr. Schilling, seconded by Mr. Corry, the following resolution was adopted:

WHEREAS: It is deemed advisable to withdraw the project from the end of Project 32 to the Georgia line, Road No. 4, Nassau County, as a Federal Aid project and proceed with the construction of said section of Road No. 4 as a State project; now, therefore, be it

RESOLVED: That the Chairman is hereby directed to withdraw the above section of Road No. 4 as a Federal Aid Project, and the Board hereby

allocates sufficient State funds to replace Federal funds withdrawn; and be it further

RESOLVED: That the Chairman be directed to advertise for bids for hard surfacing this project and as soon as plans are completed, the State Highway Engineer is instructed to proceed at once with this work.

### DeSoto County—Road No. 2

Mr. C. E. McRae, Chairman of the Board of County Commissioners of DeSoto County, came before the Board asking that rock be shipped to that county for use on Road No. 2.

Upon motion of Mr. Green, seconded by Mr. Corry, the following resolution was adopted:

RESOLVED: That the Department does hereby agree to furnish to DeSoto County twenty-five (25) cars of rock F. O. B. destination, for use on Road No. 2, from Arcadia to the Hardee County Line.

### Designation of Road No. 1 From Tallahassee to Quincy

Upon motion of Mr. Corry, seconded by Mr. Schilling, the following resolution was adopted:

WHEREAS: It is desired that work on Road No. 1 in Leon and Gadsden Counties be started at an early date; be it

RESOLVED: That the Bureau of Public Roads is urgently requested to locate the permanent route of Road No. 1 from Tallahassee to Quincy, in order that work may proceed at once on this section of road.

### Signs for State Roads

Upon motion of Mr. Schilling, seconded by Mr. Corry, the following resolution was adopted:

RESOLVED: That all road signs and markings for State roads be done in blue and white; all former resolutions in conflict herewith being hereby rescinded.

### State Road No. 1 Association

Senator Wells, of Chipley, a member of the Legislative Committee of State Road No. 1 Association presented to the Board a resolution asking the Department to begin work on State Road No. 1 at the earliest possible time, putting such surface on same as is deemed advisable by the Department. Also, a resolution commending the Department for its action in regard to the Escambia Bay bridge.

The Board ordered the resolutions presented by Senator Wells filed and informed the Committee that a part of Road No. 1 embraced in their resolution was ready for construction work to begin and that bids would be called for on sand-clay construction at once and as soon as surveys were made, the work would be carried forward as soon as practicable.

### Associated General Contractors of Florida

A petition was presented by the Associated General Contractors of Florida regarding a modification of the Standard Specifications being used by the State Road Department, and requesting a conference with the engineers of the Department regarding same.

Upon motion of Mr. Green, seconded by Mr. Schilling, the following resolution was adopted:

RESOLVED: That the resolution of the Associated General Contractors of Florida be received and due consideration will be given same.



**Duval County**

Col. Coe, County Engineer, and Mr. Lovett, County Commissioner, of Duval County, came before the Board requesting the State Road Department to take over Road No. 1 from the city limits of Jacksonville to the eastern end of the concrete road for maintenance.

Upon motion of Mr. Green, seconded by Mr. Corry, the following resolution was adopted:

**RESOLVED:** That the request of Duval County be granted and the Department hereby agrees to take over for maintenance that portion of Road No. 1 from the city limits of Jacksonville to the eastern end of the concrete road.

## Contracts Awarded by the State Road Department

January 1, 1923, to October 26, 1923

CONTRACTOR	Proj. No.	COUNTY	ROAD (Length, Miles)	BRIDGES (Length, Feet)	Estimated Cost	TYPE
J. D. Donahoo.....	534-A	Brevard .....	2.65	.....	\$ 29,491.00	Grading St. John's River Flat
Morgan-Hill Co.....	570	Manatee .....	3.076	.....	154,584.35	Bit. Mac.
McCormick-Delaney .....	562-A	Highlands .....	5.378	.....	14,976.06	Grading
Hancock Brothers .....	35	Escambia .....	5.0	.....	152,411.87	Concrete Surface
Morgan-Hill .....	520	Marion .....	15.53	.....	12,771.00	Surface Treated
J. Y. Wilson.....	532	Volusia .....	18.3	.....	8,624.00	Surface Treated
Barber-Fortin .....	554	Brevard .....	5.0	.....	96,722.47	Rock Base
Barber-Fortin .....	507	Flagler .....	5.0	.....	98,258.73	Rock Base
Barber-Fortin .....	546	Flagler .....	14.4	.....	205,589.88	Rock Base
W. P. Kennedy.....	562-B	Highlands .....	10.708	.....	353,752.90	Sheet Asphalt
C. F. Lytle.....	27 A-B	Columbia .....	12.36	.....	541,991.98	Concrete
Noll & Noll.....	534	Brevard .....	11.70	.....	220,271.04	Rock Base
Ed Pettus .....	568	Jackson .....	.....	3,315	105,834.52	Creo. Timber Approach to Victory Bridge
A. Bentley & Sons Co....	39	St. Lucie-Brevard .....	.....	901	187,346.50	Concrete Bridge, Sebastian River
Noll & Noll.....	584	Osceola .....	2.0	.....	53,608.50	Brick Surface
Robert Muggee Co.....	583	Hillsborough .....	.....	172	67,215.06	Sulphur Springs Concrete Bridge
Bd. Co. Commissioners..	589	Lee .....	8.0	.....	20,000.00	Marl Surface
E. W. Parker.....	527	Pinellas .....	.....	1,555	29,436.89	Approach Embankment
M. J. Cole.....	523	Okeechobee .....	8.25	.....	206,664.11	Rock Base
C. F. Lytle.....	36-B	St. Lucie.....	7.121	.....	262,026.00	Concrete Surface
Broadbent & Groeting...	545	Hernando .....	9.517	.....	316,081.07	Sheet Asphalt
W. P. McDonald Cons. Co.	37-E	Alachua .....	7.962	.....	146,428.32	Sheet Asphalt
J. Y. Wilson.....	597	Volusia .....	16.24	.....	382,008.97	Rock Base
F. W. Long & Co.....	37-A	Alachua .....	.701	.....	28,440.54	Sheet Asphalt
Fla. Drain. & Cons. Co...	37-D	Alachua .....	2.14	.....	142,622.71	Dredged Embankment
F. W. Long & Co.....	37-C	Alachua .....	3.261	.....	144,682.84	Sheet Asphalt
C. F. Lytle.....	40-D	Brevard .....	6.727	.....	173,380.80	Rock Base
C. F. Lytle.....	40-A	Brevard .....	16.169	.....	446,546.93	Rock Base
Boone & Wester.....	564-B	Charlotte .....	7.00	.....	35,115.30	Grading and Drainage
Total.....	.....	.....	205.30	5,943	\$4,636,884.34	.....

Note.—Included in the above figure for total cost of contracts awarded is \$389,832.97, bridge contracts. The estimated cost of each project is the contractor's price plus 10 per cent for engineering and contingencies.

### TEN MOTOR COMMANDMENTS FOR GREATER SAFETY

The National Automobile Chamber of Commerce, believing that the careful observation of a few simple traffic rules will materially help in making travel safer on the highways, has prepared the following "ten commandments." They have been printed on tags, to be attached to the steering wheel, so that the purchaser may have the maxims in mind when he buys his car. They will also be printed in automobile instruction books:

I. Always remember you are an engineer, fully responsible.

II. Always test your brakes when starting, and have them inspected frequently.

III. Never pass a street car when it is stopping, or, if the law permits, proceed very slowly past it at the legal distance.

IV. Exercise especial care in crossing in front of a street car or in passing it, as you cannot tell what may be coming on the other side.

V. Always signal with hand when slowing down, turning or stopping, even though you have an automatic or mechanical warning device.

VI. Look before you back, and sound the horn three times.

VII. Try to drive with using the horn as little as possible. A sudden noise may stop pedestrians in their tracks rather than warning them.

VIII. Don't count too much on the common sense of the other fellow. No one is 100 per cent alert all the time.

IX. Drive slowly in streets where children are playing. Remember your own childhood.

X. Cross crossings cautiously. Warning bells may be out of order, watchmen or gate operators may be off duty. Trains cannot stop as quickly as you can. Shift into second to avoid stalling on tracks.



## 10,000 MILES OF NEW ROADS IN THE SOUTH-LAND

Over 10,000 miles of roads were completed or placed in an advanced stage of construction in 16 southern state during 1922, at a cost in excess of \$165,000,000. Bonds for good road development during the year reached a total of \$132,199,615, and since much of the expenditure for new roads comes from state taxable sources and from Federal aid, it can readily be seen that \$200,000,000 is more nearly correct.

One of the most important developments in recent southern road building is the large amount of hard-surfaced roads being laid. Until 2 or 3 years ago, unbound macadam was the only hard road laid, but today 20 to 50% of all state highways being built are asphalt or similar hard surface. The time is very near at hand when the northern and eastern tourist can make his Florida trip over perfect roads every mile of his journey.

Taken with the Federal aid appropriations for the period 1921-1925 and the new bond issue, North Carolina, for instance, has available the enormous sum of \$120,000,000 with which to develop the network of highways that traverse the state.

Under the stimulus of what its neighbor is doing, South Carolina is now projecting a bond issue of \$50,000,000 for road development. Sentiment has been widely crystallized and the probabilities are that the bond issue will be passed within another 12 months.

Georgia, while turning down an ambitious program of bonds to total \$75,000,000 at the last meeting of the legislature, is awakening to the necessity of state-wide action, and something definite in the way of a large bond issue for state highways will probably result at an early date.

Arkansas, Oklahoma and Texas are building rapidly and with permanence. In Arkansas and Oklahoma the counties which have recently been enriched by the sudden wealth of oil development are spending large sums in hard surfaced roads, in the construction of huge bridges and in opening up additional areas to motor traffic. The vital need of automobile communication in the oil areas has spurred on the sections around Fort Smith, El Dorado, Muskogee, Tulsa and other points to ever increasing development.

Texas, with its hundreds of miles of distances, during the past 2 years has laid down 1667 miles of highway and has 1591 additional miles in various stages of completion. Of this total, 1089 miles is hard surfaced. The estimated cost is in excess of \$48,000,000. This does not take into consideration large projects financed by counties.—The Highway Engineer and Contractor.

### FLORIDA'S ROAD SYSTEM

#### The "Miller" Bill, Enacted by the Legislature of 1923, Defines the State Highway System

AN ACT Declaring, Designating and Establishing a System of State Roads, Providing for the Location Thereof, and Providing that Such Roads when

Located and Constructed Shall Become and be the Property of the State.

*Be It Enacted by the Legislature of the State of Florida:*

Section 1. That the following named and numbered roads be and are hereby declared, designated and established as State Roads:

Road No. 1. Extending from the Alabama State line at Nunez Ferry and from Flomaton to Jacksonville, passing through Pensacola, Milton, Crestview, DeFuniak Springs, Bonifay, Chipley, Marianna, Cypress, Chattahoochee, Quincy, Havana, Tallahassee, Monticello, Greenville, Madison, Live Oak, Lake City, Sanderson, Macclenny and Baldwin.

Road No. 2. Extending from the Georgia State line North of Jennings to Fort Myers, via Jasper, White Springs, Lake City, High Springs, Gainesville, Ocala, Leesburg, Lisbon, Grand Island, Eustis, Mt. Dora, Plymouth, Orlando, Kissimmee, Haines City, Bartow, Arcadia and Olga Bridge, also from Leesburg to Lakeland via Mascotte, Groveland, Buck Hill, Polk City to Lakeland.

Road No. 3. Extending from the Georgia State line at a point on the St. Marys River known as Wild's Landing to Orlando, via Jacksonville, Orange Park, Green Cove Springs, Palatka, East Palatka, Crescent City, DeLand and Sanford.

Road No. 4. Extending from the Georgia State line South of Folkston to Miami, via Hilliard, Calahan, Jacksonville, St. Augustine, Bunnell, Daytona, Titusville, Ft. Pierce, West Palm Beach and Fort Lauderdale.

Road No. 5. Extending from High Springs to Fort Myers, via Newberry, Archer, Williston, Dunnellon, Inverness, Brooksville, Lutz, Tampa, Riverview, Bradentown, Sarasota, Venice and Punta Gorda.

Road No. 6. Extending from the Alabama State line South of Dothan to Apalachicola, via Campbellton, Marianna, Altha, Blountstown, Scotts Ferry, Wewahatchka and Port St. Joe.

Road No. 8. Extending from Haines City to Fort Pierce, via Lake Wales, Frostproof, Avon Park, Sebring, Lake Annie and Okeechobee City.

Road No. 9. Extending from the Georgia State line South of Quitman, via Madison to a point on Road No. 19, near Shady Grove.

Road No. 10. Extending from the Georgia State line near Beechton to East Point, via Tallahassee, Crawfordville, Blockers Ferry and Carrabelle.

Road No. 11. Extending from Monticello to the Georgia State line toward Thomasville.

Road No. 12. Extending from Bristol to the Georgia State line via Telogia, Hosford and Quincy toward Bainbridge.

Road No. 13. Extending from Baldwin to Cedar Key, via Starke and Gainesville and Bronson.

Road No. 14. Extending from Gainesville, via Palatka, to intersection of Road No. 4 near Hastings.

Road No. 15. Extending from a point on Road No. 5 at Brooksville to St. Petersburg, via Aripeka, Hudson, New Port Richey, Tarpon Springs, Clearwater and St. Petersburg.

Road No. 16. Extending from Ocala to Road No. 5 via Dunnellon, thence to Holder, Crystal River, Homasassa and Aripeka.



Road No. 17. Extending from Haines City to Clearwater, via Lakeland, Plant City, Tampa and Oldsmar.

Road No. 18. Extending from Sarasota to Lake Annie via Verna and Arcadia.

Road No. 19. Extending from State Road No. 1, East of Tallahassee to Williston, via Perry, Cross City and Bronson.

Road No. 20. Extending from Cottondale to Panama City, via Round Lake.

Road No. 21. Extending from Daytona to DeLand.

Road No. 22. Extending from Orlando to Indian River City, via Ft. Christmas, also from Orlando to Crystal River via Winter Garden, Clermont, Mascotte, Groveland, Bushnell and Inverness.

Road No. 23. Extending from Belleview to Plant City, via Bushnell and Dade City.

Road No. 24. Extending from Kissimmee to Melbourne, via St. Cloud.

Road No. 25. Extending from Olga Bridge to West Palm Beach.

Road No. 26. Extending from a point on Road No. 8 East of Lake Annie, to Road No. 25, via Moore Haven.

Road No. 27. Extending from Fort Myers to Miami.

Road No. 28. Commencing at Lake City, thence to Lula via Lake Butler to Starke.

Road No. 29. Extending from Perry to Branford via Mayo.

Road No. 30. Also from Frostproof to Vero, via Lokosee and Fort Drum.

Road No. 31. Road from Ocala to Waldo via Citra, Island Grove and Hawthorne.

Road No. 32. From Bradentown to Avon Park by way Parrish, Fort Green and Wauchula.

Road No. 33. Extending from the Alabama State Line South of Florala via Laurel Hill to a point on Road No. 1 at or near Crestview.

Road No. 34. Extending from Brooksville to Dade City via Spring Lake and Blanton.

Road No. 35. Extending from the Georgia line through Greenville to a point on Road No. 19.

Road No. 36. Extending from Leesburg to Inverness via Wildwood and Rutland.

Road No. 37. Extending from the Alabama State line at Dixonville, via Allentown, to State Road No. 1 at Milton.

Road No. 38. Extending from Road No. 2, at Weirsdale, East to Umatilla in Lake County by way of Starke's Ferry.

Provided, that the roads designated as roads numbered from 1 to 5 inclusive, and Roads No. 8 and 19, said Road No. 19 to be built after Roads No. 1, 2, 3, 4, 5, and 8 are completed, shall be first completed before any new contracts are made for work on any of the other roads herein provided for, but this proviso shall not be construed to interfere in any way with any contracts already made with any county for construction of any part of any road or roads herein designated, nor with the construction or maintenance of such other roads as have heretofore been designated and approved by the National Secretary of Agriculture as included in the State and Federal Seven Per Cent Highway System as follows:

Road No. 6. Alabama Line to Marianna.

Road No. 7. Pensacola to Alabama Line at Flomaton, 44 miles.

(Note.—Ten miles of this road now under construction, county paying one-half, Federal Aid other half. Remainder of road will be built by county with bond money.)

Road No. 10. Tallahassee to Georgia Line, 18 miles.

Road No. 13. Baldwin to Gainesville, via Starke, 47 miles.

(Note.—Duval will build her part of this road and Bradford her part, leaving six miles in Clay County to be built by State.)

Road No. 14. Gainesville to Hastings, via Palatka.

(Note.—This road will be built by Putnam and Alachua counties.)

Road No. 16. Ocala to Road No. 5, 30 miles.

Road No. 17. Haines City to Tampa, 57 miles.

(Note.—This road already built by counties.)

Road No. 21. Daytona to DeLand, 22 miles.

(This road already built by counties.)

Road No. 24. Kissimmee to Melbourne, 53 miles.

(Note.—This road already built except about 12 miles, which Department is now building.)

Also forty-five miles to be designated by the State Road Department and Federal Government as part of the Federal seven per cent system.

Section 2. That the above named and numbered roads shall be and constitute the system of State Roads of this State, and when located and constructed by the State Road Department shall become and be the property of the State.

Section 3. That the State Road Department is hereby vested with authority to determine and fix the lines and location of such roads between the cities and places thereon named in Section one of this Act. All the laws and parts of laws applying to and affecting State Roads, designated and established by the State Road Department, shall apply to and affect the roads herein named and established as State Roads, and the State Road Department shall have all the power and authority with respect to the roads herein named and declared as it had at the time of the passage of this Act, with respect to State Roads designated and established by said Department; Provided, that said Department shall not hereafter have the power to designate and establish State Roads.

Section 4. All laws and parts of laws in conflict herewith be, and the same are, hereby repealed.

Section 5. This Act shall take effect immediately upon its becoming a law.

Approved June 8, 1923.

The license on a Ford for one year in England is \$100.

The difference between Satan and the road department is that the former makes his detours more enticing.—Knoxville Sentinel.

A highway financing bill introduced in the Arkansas Legislature provides for a tax of 4 cents a gallon on gasoline, a tax on automobiles of 12 cents per horse power and 55 cents per 100 pounds gross weight, a tax on trucks ranging from \$25 to \$500, and on motorcycles, \$10 flat. The minimum tax for automobiles would be \$15.—Good Roads.



# DETOURS

"One more question, Mr. Miff," said the insurance agent as he filled out Miff's application blank for a fat policy. "What make of car do you drive?"

"Why, I don't drive any," said Miff, "I hate them."

"Sorry, then, Mr. Miff," said the agent as he tore up the application, "but our company no longer insures pedestrians."—Ex.

"I wisht I was a little rock  
A settin' on a hill;  
A doin' nothin' all day long  
But jes a settin' still.  
I wouldn't eat, I wouldn't drink,  
I wouldn't even wash,  
I'd set and set a thousand years,  
And rest myself, by gosh!"  
—Nebraska Awgwan.

## All Would Be Vanity Here

In England, Henry Royce, maker of the Rolls-Royce, has had a statue of himself erected. That may work all right in England, but over here some guy in a Ford would knock it over before night.—Nashville Banner.

Every time they quarreled she threw the Ford in his teeth.—Judge.

Teacher—"Bobby, how many times have you whispered today?"

Bobby—"Onet."

Teacher—"Willie, what should he have said?"

Willie—"Twict."—Ex.

Employer (to applicant): "And what was your former line of work?"

Applicant: "I was an organist."

Employer: "An organist! And why did you give it up?"

Applicant: "The monkey died."—Pipe Stories.

The automobile is a beautiful toy,  
And a useful one, too, as everyone knows;  
But you really can't count it an unalloyed joy  
For it's only a pleasure, as far as it goes.  
—New York Medley.

"Notice the hangdog look on Doc. Hennessy?"

"Yes, he's terribly humiliated. Thieves stole his car—and brought it back."—Judge.

"Did you bring home any relics?"

Returned Tourist—"Well, there's the car!"—Judge.

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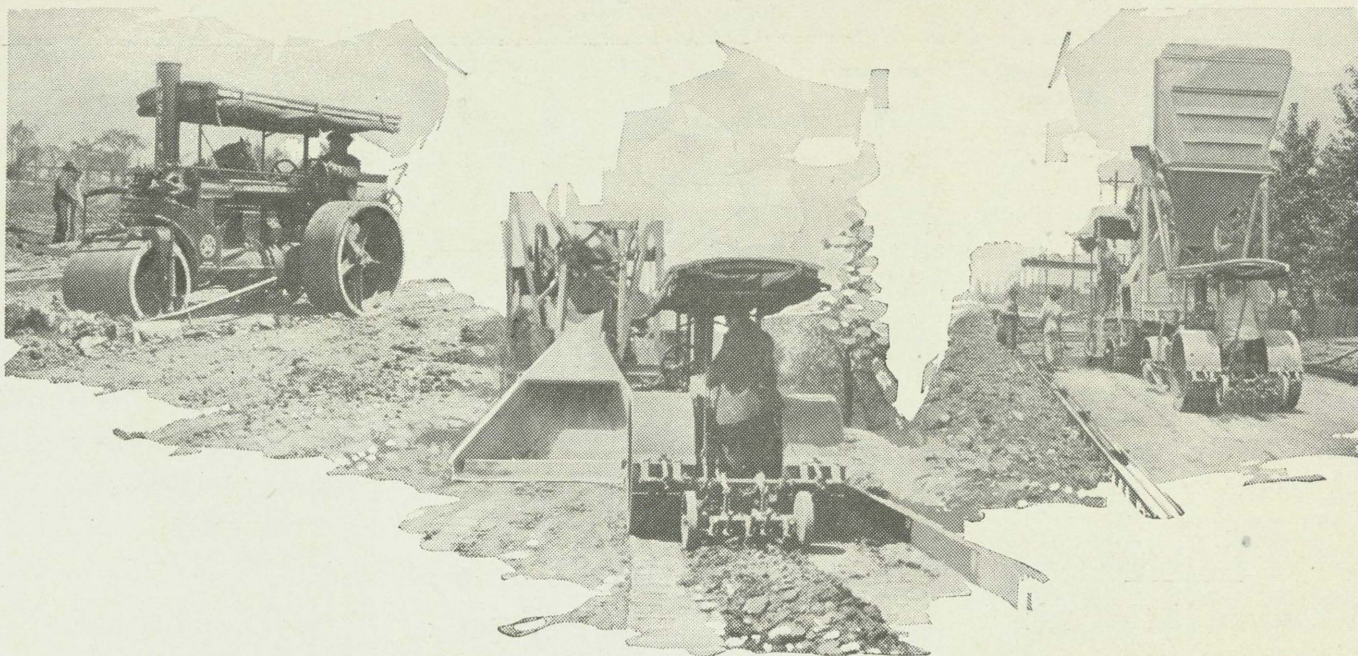
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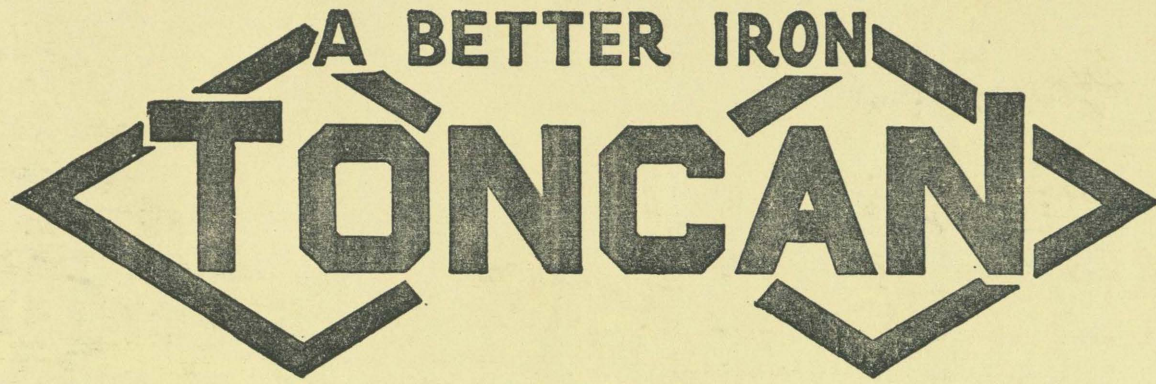
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